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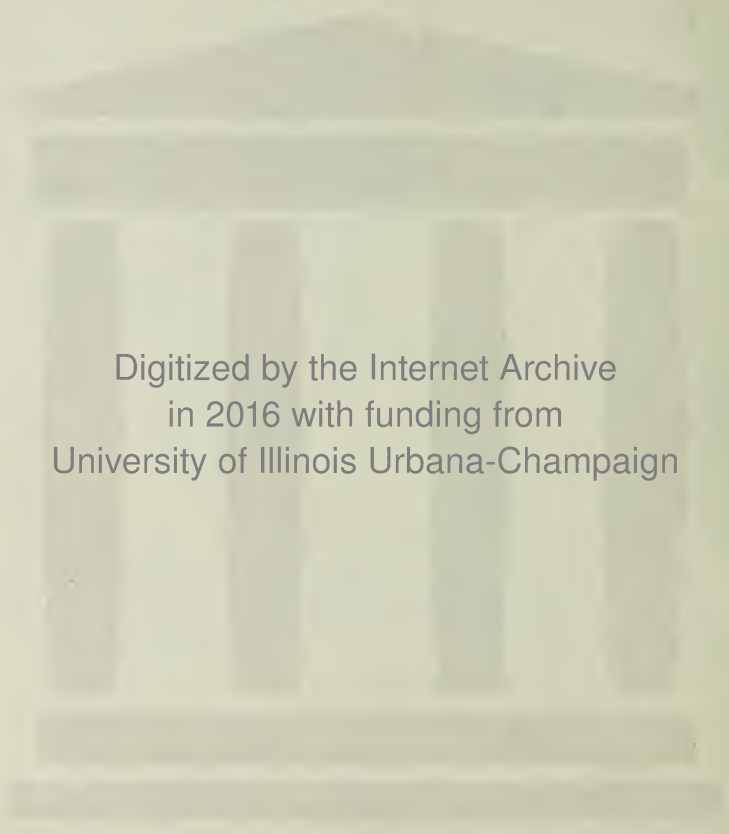


ILLINOIS STATE MUSEUM
GUIDE TO THE EXHIBITS

1937

SPRINGFIELD, ILLINOIS

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ILLINOIS STATE MUSEUM
GUIDE TO THE EXHIBITS

By

A. GILBERT WRIGHT,
Acting Chief

ASSISTED BY MEMBERS OF THE STAFF

1937

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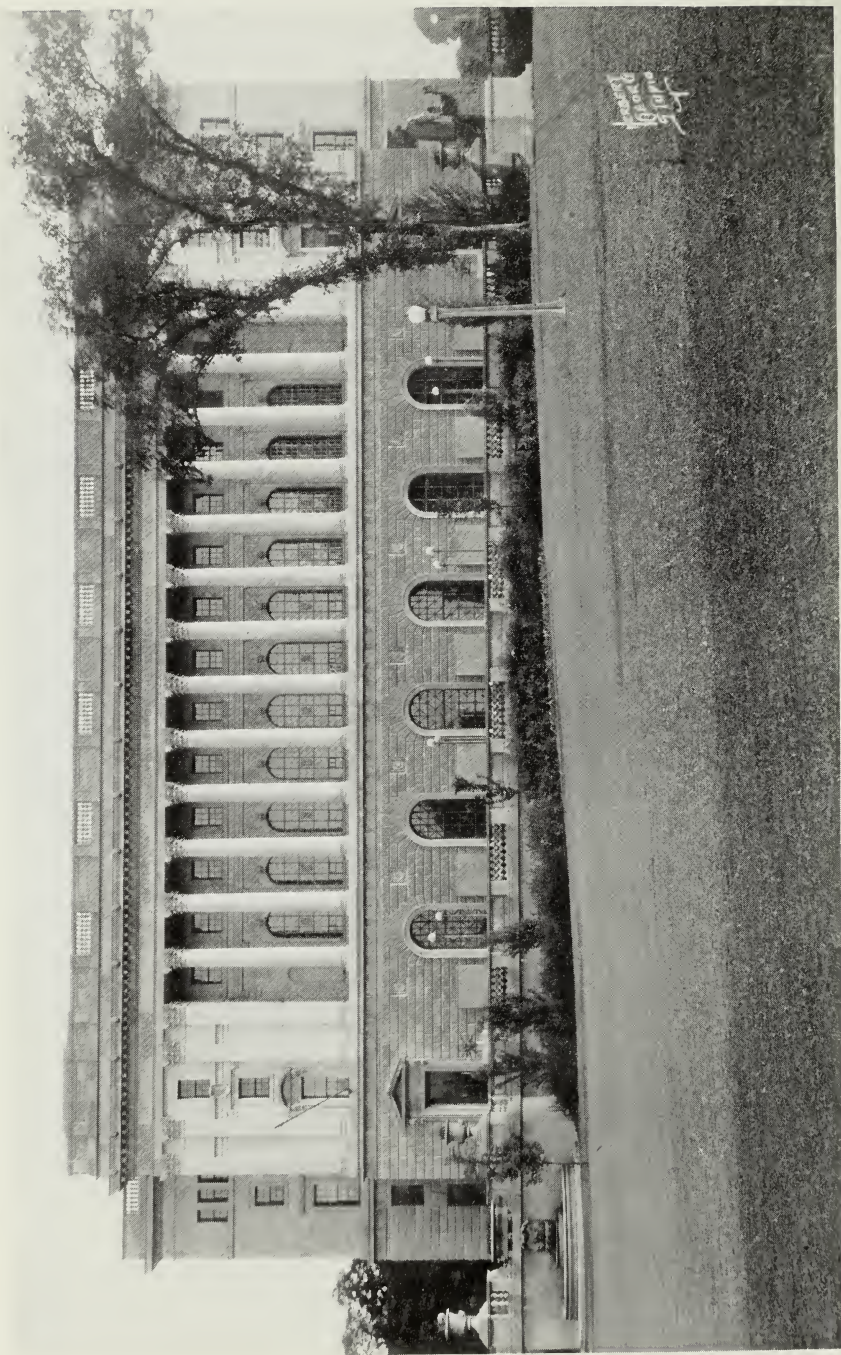
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EXPLANATION

This booklet has been published in order that museum visitors may better acquaint themselves with the collections. It is hoped that it may also give some conception of the history and aims of the institution and that it may serve to unify and refresh the visitor's memory after he has left the place. It is printed in response to many requests on the part of the public, for whom no general guide booklet has been available for more than twenty years.

The natural history section of the Museum is the oldest and even yet the most important part of the institution. Accordingly, the greater part of the booklet is devoted to an exposition of the natural history exhibits. The Art collections together with a historical resume of the development of the Museum are presented toward the close.



CENTENNIAL BUILDING, SPRINGFIELD, ILLINOIS
Home of the State Museum, State Libraries, and various departmental offices.

GENERAL INFORMATION

LOCATION

The Illinois State Museum is located on the Fifth and Sixth Floors of the Centennial Building on the State Capitol Grounds, Springfield.

The Centennial Building, designed to commemorate the hundredth anniversary of the admission of Illinois into the Union, is also the home of the State Libraries and various departmental offices.

The main entrance to the building is at Second and Jackson Streets.

HOURS

Monday to Friday (inclusive): 8:30 to 5:00

Saturday: 8:30 to 3:00

Sunday: 2:00 to 5:00

The Museum is open every day of the year except the Fourth of July, Thanksgiving, and Christmas.

Guide Service is available, free of charge, to groups of school children or adults when reservations are made in advance. Permission for photographing exhibits should be obtained from the office. Chairs are available to those wishing to sketch or paint. Public lectures on museum related subjects are occasionally given by members of the staff or visiting speakers. Such lectures are always free to the public. They are given either in the museum or in the auditorium of the Building. See Bulletin Board near East Entrance for announcements.



MAIN HALL

SCOPE OF THE STATE MUSEUM

What is the object of the State Museum? What does it contain, and what has been its history? The second and third of these questions are all too briefly answered in the following pages. To the first we can best reply that the Museum seeks to educate the public. It endeavors to bring the world of nature, especially as it relates to Illinois, within the walls of a public building where it may be available to the school boy and his teachers, the layman, and the scholar. The art section by exhibiting works of representative Illinois artists has the further purpose of acquainting the visitor with the status and progress of painting and sculpture in Illinois.

Since the Museum is primarily for the public, methods of display are given special attention so that the exhibits may be attractive and interesting as well as instructive.

The Museum was established by an act of the State General Assembly in 1877. The purpose stated was "to collect and preserve objects of scientific and artistic value, representing past and present fauna and flora, the life and works of man and geological history and natural resources, the manufacturing arts and the fine arts." Today, adhering to these earlier established principles, the Museum has come to be one of several important scientific and educational Divisions of the State Department of Registration and Education.



BISON GROUP

Bison or Buffalo were abundant in Illinois until 1750. They were practically all gone from the territory by 1800.

THE NATURAL HISTORY COLLECTIONS

The natural history objects in the State Museum are chiefly Geological and Biological in nature. The Biological exhibits subdivide into Botanical, Zoological and Anthropological departments. Accordingly we are here concerned with minerals, fossils, plants, animals and men. The Main Hall is given over to Zoology, and contains perhaps the most popular of all the exhibits, the habitat groups, so we shall begin with the Zoological Section.

THE ZOOLOGICAL EXHIBITS

The Zoological exhibits are to be found in the Main Hall, and in the North Corridor, running parallel to the Main Hall.

Here in the numerous lighted cases of individual and grouped specimens and in the realistic habitat groups, which line the walls of the Main Hall, one may make a close acquaintance with most of the visible forms of animal life of this State as well as many of other States and other countries. Altogether more than three thousand zoological specimens are shown.

THE HABITAT GROUPS OF MAMMALS

The most spectacular of the exhibits in the State Museum are the habitat groups which realistically portray animals as in their natural environments. Most of these exhibits are located along the four walls of the Main Hall. With the exception of the last to be mentioned, the groups depict the larger mammals which lived in Illinois, but which are no longer found here. The coming of civilized man brought with it the annihilation of many forms of life, and the larger mammals were the first to go. The groups in the Main Hall have been installed in order that something of the grandeur of this earlier faunal life might be preserved for present and future generations.

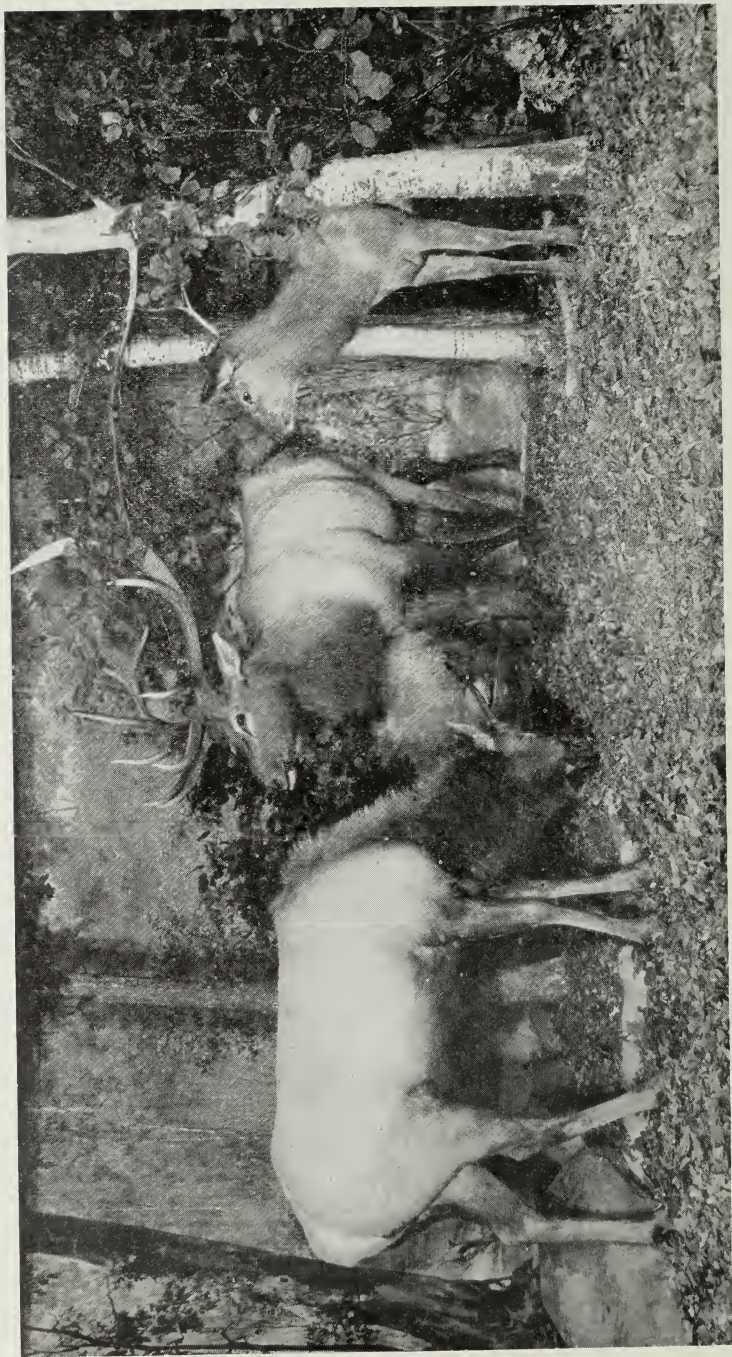
The American Bison Group. The American Bison or Buffalo is the most celebrated of all American hoofed animals. The magnificent specimens in this group are shown as part of a herd which might have appeared on the banks of the Sangamon River, near Springfield, as late as 1750. The last bison in Illinois were observed about 1800. The animals once roamed over more than a third of the entire continent of North America. The center of abundance was the Great Plains, and here they were originally found in millions. With the coming of the white man the buffalo met its doom. By 1895 the estimated primitive number of sixty million had been reduced to about eight hundred animals. These were saved from complete extinction by the governments of the United States and Canada, so that today there are perhaps thirty thousand living bison. The taxidermy and foreground of this group are by Carl Akeley and Julius Friesser. Background by Charles Abel Corwin.



VIRGINIA, OR WHITE-TAIL DEER GROUP

The Virginia Deer Group. Although it is claimed that a few wild Deer still linger in southern Illinois, they are practically extinct in this State. An animal of the forest, the Virginia Deer is here shown in a typical woodland scene during an Illinois winter. This was a favorite game animal in Illinois for many years and is still used as game in many other States. Today it is most abundant in the Adirondacks, Maine, Vermont, Northern Minnesota and Michigan, and, according to Hornaday, will be the last of the large hoofed animals of North America to become extinct. Taxidermy by Julius Friesser. Foreground by Robert Taylor. Background painted by Frances Summers Ridgely.

The American Elk Group. The American Elk or Wapiti is the most handsome and stately of the Deer Family, standing as high as a horse and crowned with huge branching antlers. The three specimens shown are depicted in a spring setting. This magnificent "king of the Cervidae" once roamed over most of the United States, including Illinois where it was common until 1820, but is now restricted to a few herds in Canada and in Yellowstone National Park and the country immediately surrounding it. The male only, as with other deer except the Caribou, bears antlers. The antlers are of bone, unlike the horns of cattle and sheep which are formed of hair. Antlers are shed during the winter and a new pair grows in during the spring and summer; they are covered with fur, "velvet" at first, but this is rubbed off in the fall. Taxidermy by Julius Friesser. Painted background by Charles Abel Corwin. Specimens presented by Frank H. Connor.



AMERICAN ELK OR WAPITI GROUP

Elk were common throughout the State until about 1820. Specimens in this Group the gift of Frank H. Connor, Chicago, Illinois.



MOOSE GROUP
Moose were formerly abundant in northern Illinois.



BLACK BEAR GROUP

The Moose Group. So far as is known the Moose is the largest member of the Deer Family that ever lived. Although its antlers are smaller, the animal is larger than the famous Irish Elk, now extinct, whose gigantic antlers may be seen on the wall above the group. The antlers of the Moose are greatly flattened and expanded in a form known as "palmation." As in other Deer, they are worn only by the male, and are shed annually. This forest animal, which once lived in northern Illinois, is a good swimmer and likes to feed on lily pads and stems. It also eats the bark, twigs, and leaves of certain trees, as well as moss and lichens. Taxidermy by Julius Friesser. Background by R. Bruce Horsfall and Charles Abel Corwin. Foreground by Robert P. Taylor.

The Black Bear Group. This species is probably the best known, bear in North America and was common in Illinois until about 1850 although it is reported to have been seen occasionally in southern Illinois as late as 1890. Still found in wooded sections of many other states, the species is well known to tourists in Yellowstone and Yosemite National Parks where it is abundant. The fur is not always black, but may be brown (see cub in group) in which case the bear is known as a Cinnamon Bear. The species is omnivorous in its eating; berries, ants, honey, roots, fish, frogs, mice, birds, comprising the greater part of its food. Taxidermy by Julius Friesser, Painted background by Charles Abel Corwin.



MOUNTAIN LION GROUP

The Mountain Lion Group. This animal, formerly abundant in Illinois is here shown in a canyon at Starved Rock. Originally it ranged from Maine to Florida, west to California and south through Mexico and Central America as far as Patagonia in South America. Because of its great distribution it has many names. In some places it is known as Mountain Lion, in other as Cougar, Puma, Catamount, Panther and even Varmint. In the United States it has been exterminated from all but the wilderness areas and, because of its depredations on colts, calves, poultry, etc., it is probably destined to complete extinction in this country. Taxidermy by Julius Friesser. Painted background by Charles Abel Corwin. Foreground by Robert P. Taylor.

The Kodiak or Alaskan Brown Bear Group. Although not an Illinois species, the Kodiak Bear, because of its enormous size, is one of the most interesting of American mammals. The group is one of the finest of its kind to be seen in any museum. The magnificent specimens were donated to the Museum by Mr. and Mrs. Claude H. Barr, of Springfield, Illinois, by whom they were collected. The range of this gigantic species, the largest of all bear, and the largest flesh-eating mammal in the world, extends along the southern coast of Alaska and the large Islands off the Alaskan Peninsula, (Kodiak Island in particular). The animals feed largely on salmon, which are very abundant



KODIAK BEAR GROUP

This Bear is the largest of flesh-eating mammals. Its favorite food is salmon. Gift of Mr. and Mrs. Claude H. Barr, Springfield.

and easily caught in the shallow streams. This bear is generally considered by hunters as the most dangerous to man of the large animals of North America. Taxidermy by Julius Friesser. Painted background by Charles Abel Corwin. Foreground by Robert P. Taylor.

OTHER MAMMAL EXHIBITS

Besides the large habitat exhibits a number of additional mammal specimens are shown in the Main Hall. Most of the Illinois varieties, as well as many from other states and countries are included.

The Cat Family. The cats are all readily identified, from the house cat to the Mountain Lion. They have long sharp retractile claws, a short broad skull with a short face, powerful jaws with large canine teeth, and a tongue that is covered with sharp, horny, backwardly directed papillae. The Canada Lynx, a northern species, and the Bob Cat, or Wild Cat, a more southerly distributed species, are shown in this case. Both were once common in Illinois, although the Lynx is no longer to be found here, and the Bob Cat has become very rare, if not extinct in this State.

The Dog Family. This family includes, among American mammals, the Wolves and Foxes. In the wild state they are not characterized by many admirable traits, although domestic dogs are much loved by man. It has been said there is no depth of meanness, treachery, or cruelty to which the Wolves will not descend. They are the only animals on earth which make a regular practice of killing and devouring their wounded companions. From the commercial side, however, this family is entitled to respect. The pelts of both Wolves and Foxes are of value, those of certain varieties of foxes bringing high prices. In the Dog Family Case are shown an unusually fine specimen of the Gray or Timber Wolf, the Coyote or Prairie Wolf, the Gray Fox, and the Red Fox, all of Illinois, as well as the Arctic Fox of the far north.

The Smaller Carnivores, or Flesh Eating Mammals. In this case one may see such animals as the Raccoon, Weasel, Wolverine, Badger, Mink, Ferret, and Skunk. All are more or less common and in most instances have adapted themselves to the changed conditions wrought by man, so that they are not likely to become exterminated at least for many years to come.

Bats. These are the only mammals that actually fly. The wing is a leathery membrane supported by enormously elongated fingers and attached to the hind leg and sides of the body. A remarkable tactile sense, enabling them to avoid objects in their flight, has been wonderfully developed in these nocturnal creatures.

Illinois Bats are small and harmless. They are not poisonous. They do not carry lice nor do they attack human beings. They are beneficial to man as they devour insects in unbelievable quantities. In addition to several Illinois species, the Flying Fox, or Fruit Bat of Africa is shown for comparison.

The Case of Rodents. The Gnawing Animals. There are more kinds, or species, and more individuals in this group than in all other orders of mammals put together. They are all characterized by strongly developed chisel-like front teeth (incisors) and a lack of canine teeth, which leaves a wide gap in front of the back teeth. The Rodents have invaded all environments, and some of them (Beaver and Muskrat) live part of their lives in water, while others approach the bat as flying mammals, (the Flying Squirrel, which does not actually fly but glides). Beside the Beaver and the Porcupines, including the famous African species, many American Rodents are shown in this case. A White Squirrel and a Black Squirrel are also shown. These are not distinct species but rather the result of abnormal pigmentation known as albinism in the first and melanism in the second.

Muskrat Group. At the west end of the Main Hall, near the Rodent Case, one may learn something of the habits of the Muskrat. In a small case, with painted background and foreground representing a scene in midstream, an actual Muskrat house is shown, with the animals swimming about. The house has been sectioned so that the inside chamber, with the exit in the floor, may be clearly seen.

The Marsupial Case. Here are shown animals which carry their young in pouches. The Opossum of North America and the Kangaroo of Australia are typical marsupials. Excepting Opossums all the pouched animals are found in Australia and its neighboring islands. The purpose of the pouch may be readily understood when it is known how tiny the young are at birth. An entire litter of sixteen baby opossums may be placed in a teaspoon, while the single new-born young of a Kangaroo is but an inch in length. Were it not for the pouch they might easily become lost by the mother.

The Primates. In the Primate Case, near the Marsupials, one may see some of the aristocrats among mammals, (Primus, L.—First). They are so classed because of their larger brains, and their resemblance to Man. Some of the South American Monkeys and Marmosets, as well as Lemurs from Madagascar and a rather fine specimen of Baboon from Africa, are presented in this exhibit.

Unusual Mammals. In this case, opposite "Primates", are shown some of the unique mammals of the world which are more or less oddities in the world of nature. Among them is the South American three-toed Sloth, which spends most of its life in trees, rarely coming to the ground. Its feet are hook-like organs of suspension so that the Sloth always hangs upside down from a limb. The Pangolin, or Scaly Ant Eater is another unusual mammal. It is covered with scales like a fish, although these are formed of fine hairs grown together. The Pangolin is an African species. Other unusual mammals are the Armadillo, the Coati, the Kinkajou, the Shrew, the Great Ant Eater, and the African Hedgehog, as well as the Common Mole of our own locality.



SCREECH OWL GROUP

THE BIRDS EXHIBITS

Apart from the habitat groups of Mammals, the most conspicuous objects in Main Hall are the many lighted cases of birds, domestic and foreign. Nearly fifteen hundred specimens are exhibited.

Birds are divided by ornithologists into about twenty-five Orders and these are subdivided into Families. Again the Families are subdivided into Genera, and the Genera, into species. The total number of species has been estimated at from fifteen to twenty-five thousand. Of these about eight hundred and fifty are North American, almost half of which (390) are common to Illinois.

BIRDS OF ILLINOIS

In harboring nearly half of the 850 species of North American Birds, Illinois leads all the States but five in its Avian population. The reasons for the abundance of species and individuals might be briefly summarized as follows:

1. The dimensions of the State, it being nearly 380 miles in length ($5\frac{1}{2}$ degrees latitude).
2. Its central location among the routes of migration—the “fly-ways” of North America.
3. The superabundance of trees and other vegetation.
4. The numerous lakes, rivers, and streams.

The bird population of Illinois has been estimated at 30 million. The economic importance of these birds is beyond measurement. The game birds provide food, the hawks and owls destroy harmful rodents, the vultures act as scavengers, and the insect eating species devour an estimated 150,000 bushels of insects daily.

Although timber tracts have been cut away, and cities have been built, probably most of the species originally native to the State are still found here. A few species, however, have become entirely extinct, while several others are now exceedingly rare.

Screech Owl Group. This case shows one of the most interesting of the smaller birds of Illinois. It is poorly named, as its tremulous high-pitched call is more of a plaintive wail than a screech. These nocturnal birds are found in every wooded section of the State, and even in orchards and city parks. The nest is usually in a hollow tree. The bird never appears abroad in the daylight except when driven out of its retreat by the attacks of hostile birds. Its eyes cannot endure the light so that it experiences great inconvenience from such an exposure. Screech Owls are excellent mousers, and swallow their food whole, ejecting the indigestible parts, such as hair, bones, feathers, in the form of pellets. A peculiar feature of the species is its "dichromatism"—its two phases of color, one reddish brown, the other gray. These are merely individual variations, and both phases are frequently found in the same family of young.

The Wild Turkey Group. In a sort of Thanksgiving scene, the Wild Turkey is presented opposite the Main Entrance. When the early settlers came to Illinois they found wild turkeys in abundance. They roamed the country in large bands, and were distributed from Mexico to Maine and Ontario. These are essentially woodland birds, and ordinarily walk or run about on the ground, although they are strong fliers for considerable distances, even across wide rivers.

The Wild Turkey is the largest and the grandest game bird in the world, and is not as easy to hunt as one would suppose. Turkeys are shy, and also shrewd and cunning, with an acute sense of hearing. They are still killed in the mountains of central Pennsylvania during a short hunting season, but in most sections, including Illinois, they have become extinct. Actually, this species of bird will never be exterminated, since it has been domesticated and is bred in all countries of the world, including South Africa, Argentina, and New Zealand. It should be mentioned that the domestic turkey is a descendant of the Mexican variety, and differs slightly in coloration from the Eastern Wild Turkey.

Permanent Residents. Birds which live in Illinois the year around are shown in the case of "Permanent Residents". Among them are: the Cardinal Grosbeak, or Red Bird, the official State Bird of Illinois; the Great Horned Owl, the "tiger of the air"; the Barn or Monkey Faced Owl; the Barred or "Hoot" Owl; the Blue Jay; most of the Woodpeckers; several of the Hawks, including the Red-Tail, or



WILD TURKEY GROUP



THE PRAIRIE CHICKEN

“chicken hawk” which only rarely forms a taste for poultry; the Crow, recommended as being edible; the Bob-White; the Ring-Necked Pheasant, an introduced game bird; and twenty other species.

Prairie Chicken. The Prairie Chicken has not been entirely exterminated, like the Turkey, but it seems to be on the verge of extinction. It is found in only a few sections while formerly it was widely distributed. Not only the hunter, but prairie fires (especially during the nesting season), floods, severe winters, parasites and other natural enemies, among which should be mentioned the house-cat, are responsible for its present scarcity. It is doubtful if conservation

programs can ever restore it. It is a "permanent resident" but in its northern range it migrates southward with the approach of winter. During these journeys the birds sometimes fly at a great height. The most interesting feature of this bird is its courting habits. "In the spring they court openly, and even proudly. The cocks strut about, and inflate the bare, salmon-yellow air sacs on the sides of their necks, bow low, and "Boo--hoo--hoo!" until the resounding boom rolls over the earth in great waves". (Hornaday) (Case of Permanent Residents).

Passenger Pigeon. A former "permanent resident", now extinct. Once existing in fabulous numbers, the Wild Pigeon, like the Dodo and the Great Auk, has gone into oblivion. The last wild bird of which there is a record was killed in 1904. On September 1, 1914, the end of the species came when the last bird died in the Cincinnati Zoo. The bird was twenty-five years old and is now on exhibition in the U. S. National Museum. Many theories have been advanced to explain their sudden disappearance but it seems that "civilized" man is alone responsible. In 1879 there were at least 5,000 men in the United States who pursued pigeons year after year as a business. "For many weeks the railroad shipments averaged fifty barrels of dead birds per day—thirty to forty dozen old birds and about fifty dozen squabs being packed in a barrel. Allowing 500 birds to a barrel, and averaging the entire shipment for the season at 25 barrels per day, we find the railroad shipments to have been 12,500 dead birds daily, or 1,500,000 for the summer. Of live birds there were shipped 1,116 crates, six dozen per crate, or 80,352 birds.", (Prof. H. B. Roney, 1879). As late as 1912 rewards totalling more than \$1,000 were vainly offered for evidence that the bird was living and nesting. Time after time the smaller, similarly marked, Mourning Dove, (See same case, "Permanent Residents") has been mistaken for the Passenger Pigeon.

The Carolina Parakeet. In the early days these birds were very common in this State and South-eastern United States. At the present time they are practically extinct. It is claimed that a few still nest in the remote swamps of South Carolina and possibly Florida. The flocks were soon killed by settlers because of damage done to fruit orchards. They were also killed for their plumage. The fact that the birds would return again and again to their wounded comrades was one reason for their rapid extermination. Case: "Summer Birds of Illinois".

Ivory-Billed Woodpecker. By far the largest woodpecker of North America, the Ivory Bill is today one of the rarest of birds. Its territory was southern Illinois and eastern North Carolina southward to Texas and Florida. From most of this region it has disappeared. A few still lurk in Louisiana and Florida and possibly other southern States, but there are no official records. Case, "Summer Birds of Illinois".

Whooping Cranes. Once abundant in Illinois, the Whooping Crane is, again, one of the rarest of living birds. The State Museum is fortunate in having four splendid specimens. They are at present shown in one of the regular bird cases, although a habit group of this bird is proposed. Case at east end of Main Hall.

Starling, New Species. A new comer to Illinois is the Starling. It originally came from Europe, having been started in New York in 1890. It is now a permanent resident, increasing annually, and rapidly becoming a pest. In the East it is not uncommon for 500 or 1,000 birds to alight on a cherry tree and strip it of its fruit in a few moments. It is an ill-tempered bird that drives many desirable species, especially the woodpeckers, from their homes. East end of Permanent Resident Case.

Migratory Birds. The Migratory Birds of the smaller species are grouped together according to the time of their arrival. Titles of these exhibits are:

Winter Visitors. Birds which come down from the North, to which they again migrate with the approach of Spring. Among them are: the Brown Creeper which feeds on tiny insect eggs hidden in crevices of the bark of trees; the Yellow-bellied Sapsucker which is a sap-loving Woodpecker; the Fox Sparrow, one of the largest of the sparrows, unsurpassed by other members of its family in both its beauty and its song; the Redpoll; Snow Bunting; and the Snowy Owl.

Earliest Spring Arrivals. The Bluebird, Robin, Meadowlark, Grackle, Belted Kingfisher and Towhee are among the first to arrive. Other birds in this case are: the Cedar Waxing, the Cowbird, Mourning Dove, Bronzed Grackle, Chipping Sparrow, Carolina Wren, Swamp Sparrow, Field Sparrow, Red-winged Blackbird.

Spring Arrivals. The Purple Martin, Bank Swallow, Brown Thrasher, Catbird, and about twenty other kinds are shown in this case.

Summer Residents of Illinois. Among the summer birds shown here the following indicate their variety: the Baltimore and Orchard Orioles, the Bobolink, Kingbird, Flycatcher, Pewee, Scarlet Tanager, Vireos, Warblers, Thrushes, Shrikes, Wrens, Night Hawks, Warblers.

Transient Visitors. Birds which do not as a rule nest in Illinois, but pass through the State during migrations. Among them are: Rusty Blackbird, Black-poll Warbler, Myrtle Warbler, Crossbill, Horned Lark, Bohemian Waxing, Hermit Thrush, Kinglet, Osprey and Rough Legged Hawk.

Other American Birds. Other species, migratory and non-migratory, are shown in cases bearing the following titles: Water Birds, Wading Birds, River Ducks, Sea Ducks, Geese, Swans, Shore Birds, Marsh Birds, Falcons, Vultures, Hawks, Owls, Eastern Birds, Birds of the Southwest, Toti-Palmate Swimmers. The birds in these cases bear individual labels giving a condensed account of the habits, distribution, economic importance, etc. Large detailed explanatory labels are to be found in each of the cases.

Foreign Birds. Numerous Foreign Birds are displayed in the Museum for the purpose of comparing with native species, and for the purpose of illustrating some of the especially interesting or significant varieties common to other lands.

Birds of Paradise. Near the entrance to the Main Hall is a case of more than a dozen of these brilliantly colored and wonderfully plumed birds which in reality are "glorified crows". Only the males wear the beautiful plumage, the females being very plainly dressed. Until a hundred years ago it was believed that these birds had neither feet nor wings, but lived in the air, turning always to the sun, and never alighting in the earth until they died. They were called Birds of Paradise because it was thought they retained the forms they originally had in the Garden of Eden. Birds of Paradise live in New Guinea, and on the neighboring islands.

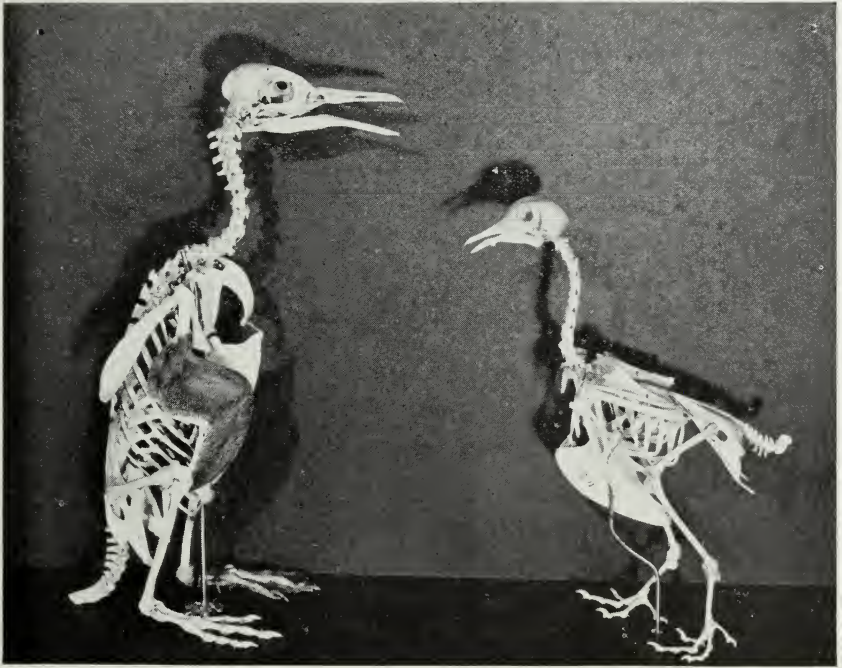
Flightless Birds. Most birds are good flyers, but there are a few foreign species that are totally unable to leave the ground. Several of them are shown in a case at the east end of the Main Hall. Perhaps the most famous of all flightless birds is the Ostrich. This giant bird, the largest of all living birds, inhabits the desert plains of Africa where it often associates with herds of zebras, giraffes, and antelopes. The Ostrich is unique in several respects: there are only two toes on each foot, it may run as fast as 60 miles per hour, and it sometimes lives as long as eighty years. The ostrich egg (see Egg Collection) weighs three pounds and is a delicious food. The Penguin, a flightless bird of strange appearance, is of the southern hemisphere, most of them living in the antarctic regions. The wings are paddle-like organs used in swimming. The King Penguin, one of the largest members of the group, and the Crested Penguin or "rock hopper", are both shown. The Tinamou is a small South American bird which is unique in its nesting habits. The female mates with several males which, in separate nests, incubate the eggs. The Kiwi, or Apteryx, is a wingless bird. It is found in New Zealand where it lives mostly among ferns in the deep forest. The flesh is used by the natives for food while the skin is used in making headdresses. Cassowaries are native to Australia and the neighboring islands. They are fierce fighters, having a large sharp claw on the inner toe of each foot which serves as a weapon. The actual length of the wing is about three inches, although sharp quills extend for some distance beyond the tip.

Other Exhibits of Foreign Birds. These are in cases along the north wall of Main Hall. The exhibits are entitled: Foreign Game Birds, Foreign Water Birds, Foreign Wading Birds, Cockatoos, Pheasants, Parrots, Toucans, Hornbills, Foreign Perching Birds (2 cases), and on the south side of Main Hall: Colorful Birds of the Tropics; Humming Birds; the Pea-fowl; (shown in a habitat group). One of the most remarkable Foreign Birds is the Japanese Fowl, the tail of which is more than eight feet in length. The Japanese Fowl is in the Domestic Fowl Case to the left of the entrance to Main Hall.

Bird Nests and Eggs. An extensive collection of bird eggs is exhibited in seven cases in Main Hall. The largest of these cases contains both nests and eggs of more than fifty common species.



FLIGHTLESS BIRDS
King Penguin, Crested Penguin, Tinamou, Ostrich, Kiwi, Cassowary.



SKELETONS OF PENGUIN AND PIGEON

ROOM OF SKELETONS

Although this department of science is probably of less general interest than any other, the exhibits in this room deserve attention because of the lessons which may be learned about human anatomy, and also because basic likenesses and differences among animals may here be readily perceived. Skeletons of various types of vertebrates, birds, mammals, reptiles, amphibians and fishes are shown in the skeleton room which is at the west end of the North Corridor. Included is a case showing the comparative anatomy of the horse and man. Another shows the structure of the wing of a bat, and a third exhibit presents a comparative collection of skulls. Among these are: the monstrous and grotesque skull of the hippopotamus, the massive rhinoceros skull, the wide flat skull of the alligator and the narrow skull of the crocodile, the toothless skull of the Galapagos tortoise, skulls of the Alaskan and Grizzly bears and small American mammals as well as those of prehistoric American Indians. Also to be seen in this room is a collection of antelope horns of African mammals. These last items were collected and presented to the Museum some years ago by Col. Theodore Roosevelt.



GREEN SNAKE

REPTILES AND AMPHIBIANS

An entire room adjoining Main Hall, at the west end of the Museum, is devoted to Reptiles and Amphibians. They are probably the most unpopular of animals, although they are interesting from many standpoints. Amphibians differ from Reptiles, with which they are often confused, in lacking scales and in passing through a tadpole stage of development during which they live in the water and breathe with gills like fish. Reptiles, on the other hand, are usually covered with scales and throughout life breathe with lungs. Both Reptiles and Amphibians are cold blooded, i. e., they have no constant body temperature but their temperature varies with the surroundings. Because they are cold blooded, Reptiles and Amphibians of Illinois hibernate during the winter.

Tiger Salamander. The salamander is regarded by many people as dangerously poisonous, but it is entirely harmless. The Tiger Salamander is perhaps the most widely distributed of North American tailed amphibians, being found from Maine to California south to Florida and Mexico. It lives around marshes and ponds and hibernates under stones during the winter.

Non-Poisonous Snakes. Most of the common varieties of Illinois snakes are shown in this exhibit. Among them are: the Bull Snake, as valuable to the farmer as a cat in the destruction of rats and mice; the Garter Snake, which while harmless should never be handled because of its habit of secreting a very foul-smelling fluid when frightened; the Hognosed Snake, the "blue racer" or Pilot Black Snake; the Ribbon Snake, similar to the Garter Snake; the Milk Snake, which never milks cows.



TIGER SALAMANDER
About two-thirds natural size.

Green Snake. This snake is curious among snakes because of the fact that it eats insects while most snakes eat small mammals, toads, birds, eggs, etc. Crickets, caterpillars, grasshoppers, and spiders seem to be preferred by this species. It is common in northern Illinois. The Green Snake is oviparous (lays eggs), and the young are blue-black for the first few months.

Poisonous Snakes. There are three species of poisonous snakes which are found in Illinois, the Rattlesnake, Copperhead and Water Moccasin. These snakes are always to be killed or avoided, as the bite from each of them results in serious illness and in a few cases has proved fatal. None of these poisonous kinds are common, although they occasionally are found in certain sections of the State.

METHODS OF PRESERVATION

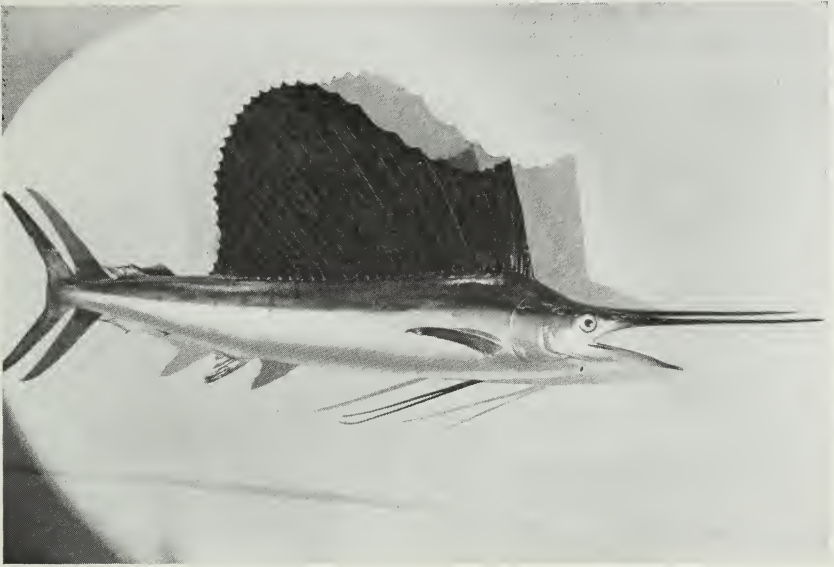
The Green Snake, illustrated, is typical of the reptile exhibits in the State Museum. It shows the animal as if it were alive, sliding over a grassy section of the ground. It is a far cry from an exhibit of this sort to the old type of alcoholic presentation, in which the pickled animal was shown as a distorted object of antipathy. There are a few "alcoholics" in the Museum, but the tendency is to replace them with the more attractive mounts of the above type and that shown on the opposite page (Tiger Salamander). Modern museums have developed new methods of depicting such creatures as these by means of casts made with plastics. When carefully and accurately made, the replica appears more lifelike than either "alcoholics" or mounted skins as the color and texture of the naked skin is preserved in its original translucence and brilliance, while this is lost in ordinary taxidermic methods.

It is true that a few people object to the idea of "casts" since they are not the actual specimens. In a public museum the point in exhibition is to best show animals as they really appear in life and the methods used in bringing about this result are not to be questioned so long as the result is in every detail an accurate representation of the specimen. Casts of the lower forms are accordingly shown with no apologies but rather with pride in their unique serviceableness.

FISH AND LOWER FORMS

All animals are classified by the zoologist under two headings; Vertebrates and Invertebrates. Those under the first heading are characterized by the presence of a vertebral column or "backbone" which is never to be found among those under the second heading. Mammals, Birds, Reptiles, Amphibians, and Fishes are the five Orders of Vertebrates, while the Invertebrates consist of Protozoans, Sponges, Corals, Worms, Mollusks, Crustaceans, Insects, and a few other less common types.

Creatures thus classified are usually arranged for study in the order of their anatomical complexity. In the North Corridor of the State Museum this formal zoological system of arrangement underlies the exhibits, the purpose being to give an orderly survey of the important animal types. This department of the Museum is especially useful to high school and college students of biology.



SAIL FISH

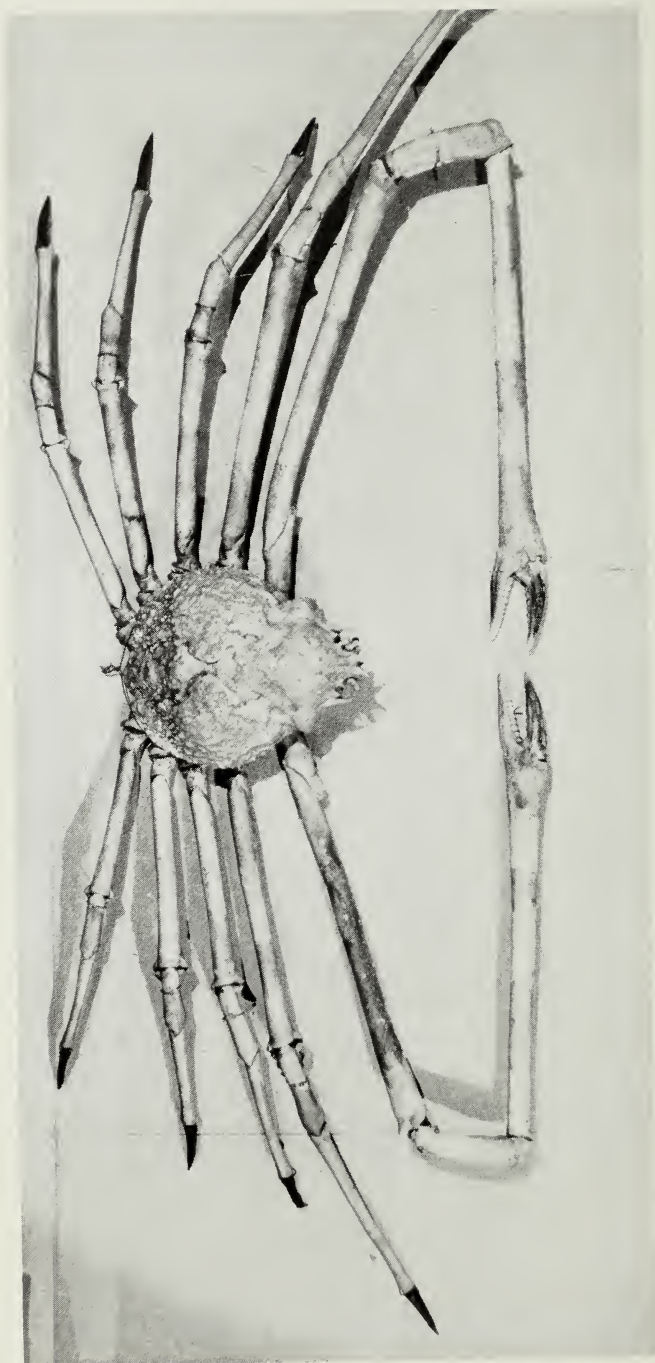
Protozoa. Protozoans are unique among animals because of the fact that their bodies consist of but one cell. They perform with this one cell all the basic functions of life characteristic of the higher animals. Protozoans make poor material for museum exhibition because of their soft, jelly-like bodies and their microscopic size.

Foraminifera. (Protozoan Case) are protozoans which construct minute shells of carbonate of lime. These shells fall to the sea bottom forming ooze which later solidifies into stone. Many geological formations consist of foraminifera. The rocks comprising the pyramids of Egypt consist for the most part of shells of these animals of which it has been estimated there are four million individual shells in an ounce of stone.

Sponges. Sponges are not plants but are marine animals found attached to rocks at the bottom of warm seas. A few microscopically small fresh water species may be found in our own streams, but the sponges of commerce come from the ocean.

Venus's Flower Basket. The most beautiful sponge skeleton is known as the Venus's Flower Basket. (See Sponge Case.) Its gleaming silver color is due to a fine network of silicon resembling spun glass. It lives near the Philippine Islands and along the Coast of Japan.

Corals. Coral is a limy secretion of a marine animal called a Polyp. The coral is constructed to serve as a shelter or home in which to live. A single polyp is usually very small, but when thousands, or millions work together their accomplishments in the production of coral are very great (coral reefs). Each species of polyp invariably con-



GIANT JAPANESE SPIDER CRAB

Specimens of this Crustacean are rare among museums of the world. Each of the fore-limbs is nearly five feet in length.

structs the same pattern of coral. A number of types of which the Brain Coral is conspicuous are shown in cases entitled "Stony Corals," "Sea Fans," "Precious Corals."

Worms. Worms are classed as: Flatworms, Round Worms, and Jointed worms. Many of them are parasitic. Only a few of the larger kinds are shown in the North Corridor.

Spiny Skinned Animals. (Echinoderms). The Star Fish is a typical Echinoderm. It lives in the sea and feeds on oysters. If broken into pieces each one becomes an individual, regenerating the missing parts. Sea Urchins and "Sea Lilies" are among other types of Echinoderms shown.

Mollusks. Snails, clams, oysters, and even the octopus belong to this group. All have soft jointless bodies and most of them are protected by shells. Many types of oceanic, land, and fresh water mollusk shells are contained in the collections of the State Museum.

Crustaceans. Lobsters, crabs, barnacles, and crayfish are common types of these jointed invertebrates. The State Museum is fortunate in having in its collection a specimen of the Giant Japanese Spider Crab. It is the largest of all crustaceans and is extremely rare among the museums of the country. The specimen shown has an "arm expanse" of slightly over ten feet.

Insects. Just beyond the Giant Crab and the case of other crustaceans is the room of Insect Exhibits which relate principally to butterflies and moths. Some of the most colorful and gigantic of tropical species are shown. In another case most of the Illinois types are presented. These include the beautiful Cecropia, Golden Imperial and the Luna Moth, as well as the Monarch, Swallow-tail, and Fritillary butterflies.

Fish Collection. The fish exhibits at the west end of the North Corridor, while not extensive, show some of the common types found in Illinois as well as unusual forms from other parts of the world.

Paddle Fish. One of the most unusual of Illinois fishes is the Paddle Fish. It has a shark-like body and a long spoon-billed snout. Considered as good eating, this fish is sometimes sold on the market as "boneless cat."

Sail Fish and Tarpon. These two oceanic fish are considered by sportsmen the most exciting of all fish to catch by rod and reel. They provide an endless number of thrills from the time they first "strike" until they are landed, or perhaps as often, escape. The Sail Fish, related to the famed Sword Fish that has been known to impale human beings on its weapon, is edible, while the Tarpon is not generally used as food.

Porcupine Fish. This fish of the tropical seas appears to be little more than an inflated ball covered with spines. It possesses what appears to be the best method of defense of all fishes.

Study Collections. The Zoological collections do not end with the exhibits. In the basement store rooms there are many cabinets of surplus material, as well as bird skins etc. that are unsuited for exhibition. These specimens are always available to the student or research worker.



SECTION OF MUSHROOM EXHIBIT

BOTANICAL EXHIBITS

While it is readily apparent to the museum visitor that the Botanical exhibits do not approach in importance those of the other natural sciences, the Mushroom Group, at the west end of the building, is especially noteworthy as it is one of the few of its kind to be found in the entire country. There are about twelve hundred different individual mushrooms, representing nearly two hundred species, shown



MUSHROOMS—POISONOUS SPECIES

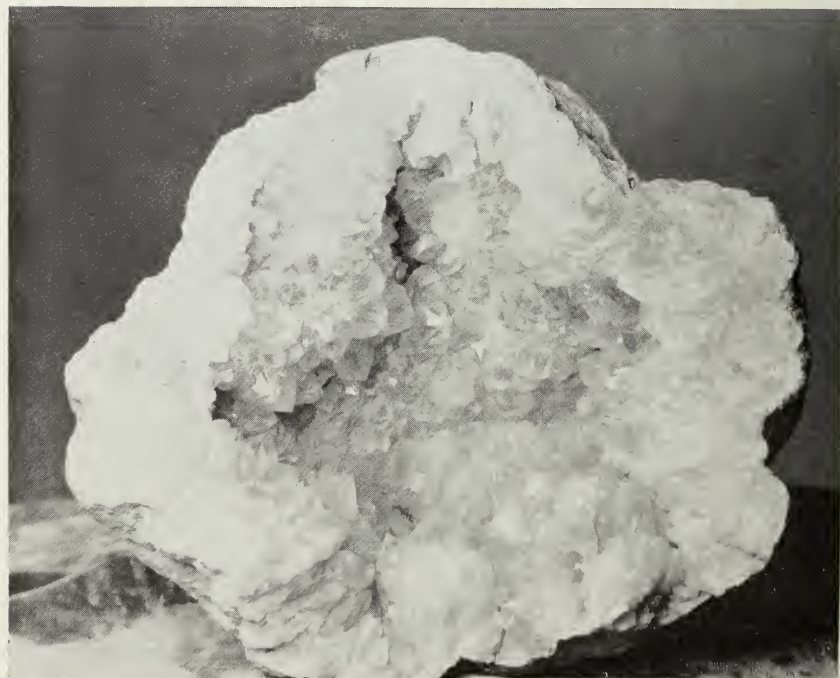
in this case which is in the form of a large half circle. The group presents a typical Illinois scene with woods on the left and right, and in front a foreground sloping from the woods out toward the low lands, through which a river flows. A spring consisting of actual running water begins in the group at the left and trickles down to meet the river represented on the canvas. In this setting the many species of mushrooms are placed according to their habitat, those found in woods being on the right and left while mushrooms of the open country are at the front of the case. These mushrooms, which are accurate in every detail, were made in plaster and wax by the noted museum preparator, Henri Marchand, who designed and executed the entire exhibit. Species which are edible are marked with a black disc; those which are inedible or mildly poisonous are marked with a red disc. Deadly poisonous species are indicated by a small wax skull in addition to the red disc.

In a nearby case instructions on the collecting of mushrooms are shown by wax models which clearly demonstrate differences existing between dangerous and harmless kinds.

Collections of wild flowers of Illinois, of many kinds of woods of America, and of tree leaf types, are also shown in the Botany Room.



CRYSTALS OF FLUORITE OR FLUORSPAR



A GEODE FROM WARSAW, ILLINOIS

THE GEOLOGICAL EXHIBITS

Geology is the science which deals with rocks, minerals, and fossils. It is not only concerned with these objects, but with dynamic forces at work in producing them as well. It is described as one of the broadest and most fundamental of the sciences because the very structure and the history of the earth come within its scope.

The Geological exhibits are to be found at the west end of the Museum, in the Geology Room. The exhibits have been arranged to show: (1) principles that are basic to an understanding of the science; (2) the mineral and fossil wealth of the State; (3) something of the geological history and phenomena of other States and other parts of the world.

THE MINERAL COLLECTIONS

In 1920 Dr. A. R. Crook, then Chief of the Museum, published a bound volume on minerals entitled "A Guide to the Mineral Collections in the Illinois State Museum." That book is still popular among students of mineralogy. Here on the pages of this booklet we can but briefly treat the subject, inviting the visitor to read the labels and supplement the knowledge gained there by individual study.

Minerals play an important part in the wealth of the world; they are of interest from many standpoints. Iron, copper, gold, coal and building stone are but a few examples of the many minerals useful to man, to say nothing of those that are prized because of their beauty—diamonds and other precious stones. Minerals are also important biologically, as without them life itself could not exist.

Just as zoologists classify animals and botanists classify plants, so mineralogists classify the minerals. They are classified according to their chemical composition. Those that contain but one chemical substance are classed as elements, those that are compounded of two or more substances are classed under various headings, such as Sulphides, Haloids, Oxides, Carbonates, Silicates, Phosphates, Sulphates, etc. The accepted classification of minerals as presented by Dana is used as a basis for the systematic exhibits in the Geology Room.

Minerals always have a definite chemical content as well as a definite combination of physical properties. These characteristics distinguish them from rocks. Rocks are usually made up of several minerals.

Elements. Some minerals are composed of but one chemical substance. These are the elements. While there are nearly 100 (92) elements, only nine of them occur in nature uncombined with other elements in sufficient quantities to be considered common. These are:

diamond, graphite, sulphur, arsenic, bismuth, gold, silver, copper, and platinum. All of them except bismuth and platinum have been found in this state, although none of them are common. (See case of Elements.)

In order to indicate something of the distinct properties of minerals, a brief mention of two radically different types that are chemically the same substance (carbon) is given.

While we do not think of Illinois as a *Diamond* producing State, it is a surprising fact to many that actually a number of diamonds have been discovered among the rocks of the State. These diamonds are immigrants brought from the North by glaciers. Most diamonds of any importance come from South Africa, and it is in that region that practically all the famous diamonds have been found.

Graphite, like the Diamond, is a form of pure carbon. Though not abundant in Illinois the mineral is scattered in flakes through gneisses and other rocks which have been strewn over the State. It is a strange fact that two minerals so nearly alike chemically should differ so radically in physical properties. The diamond is the hardest of substances, there is no mineral softer than pure graphite; while the diamond is usually transparent and of light color, graphite is opaque and black.

The diamond is very pronounced in its shape. Graphite has no marked external form. The diamond is without question the most beautiful and most valuable in proportion to its size of all minerals. Graphite is of value but is chiefly used for "lead" pencils, stove polish, paint and lubricants.

Beautiful Minerals. This case has been designed to show the more colorful types that are found in nature. One of the most beautiful of Illinois minerals is **FLUORITE** and next to coal it is economically one of the most important. More than a million dollars worth of fluorite or fluorspar, has been mined in Illinois in a single year. Fluorite occurs commonly in beautiful, clear-cut cubic crystals which vary in color in different localities. Amethystine, green, purple, rose, red and yellow are usual colors, although in many deposits the crystals are perfectly clear. Extensive and valuable deposits of fluorite occur in Hardin and Pope Counties in southern Illinois. Fluorite is used principally in the manufacture of steel, the production of hydrofluoric acid, and in the manufacture of enameled bath tubs. This mineral which is beautiful enough to be used as a gem is so soft it may be crushed between the fingers.



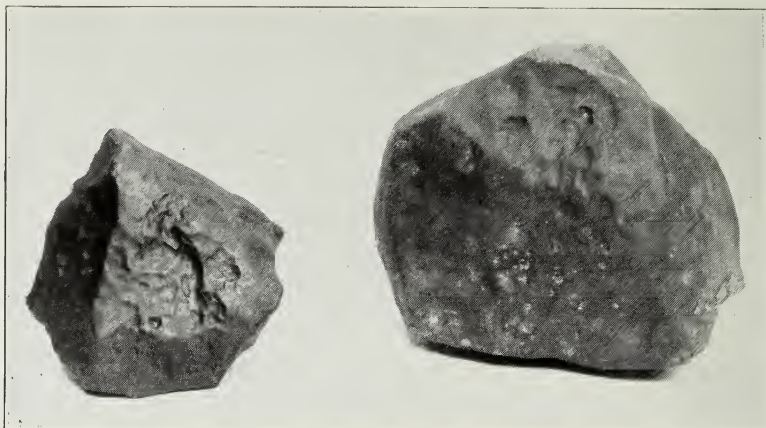
CALCITE, "DOG-TOOTH SPAR"

Agates are among the most beautiful of all minerals, although other precious stones are a great deal more expensive. An interesting variety of agates is shown in the case of Beautiful Minerals.

Agates are composed of chalcedony which is nearly identical with quartz. Chemically, all are silicon dioxide, the commonest material of the earth's solid crust. They appear to be formed of successive bands which have been laid down in the lining of a cavity, the outer band having been formed first and the others successively until the cavity was more or less filled. They are most frequently found in the cavities of volcanic rocks, and while they are common in many parts of the world the most extensive occurrence of agate known at the present time is in Brazil. Brazilian agates surpass in size and beauty any other known, and they form at the present time the principal source of supply of agates for commercial purposes.

Geodes, like agates, are formed in cavities in rocks, and resemble agates in that they are made up of concentric layers of mineral deposits. They are frequently found in limestone deposits and are among the most curious and interesting mineralogical formations common to certain parts of Illinois. Geodes are usually round and hollow and the central cavity is generally lined with beautiful crystals of quartz or calcite. They have no particular value but are sometimes broken and used as ornaments especially in rock gardens. The specimen illustrated is from Warsaw, Illinois.

Calcite. Calcite is one of the most common of all the 1,000 minerals, and is found throughout the State and the country. Some of its



TILDEN METEORITES

crystals are remarkable for their beauty. (See illustration). As a pure mineral it has little use, but as a principal constituent of limestone and marble it has economic importance. Calcite consists of calcium carbonate which is a combination of lime and carbon dioxide. Stalactites and Stalagmites of caves are commonly formed of calcite.

Meteorites. While meteorites are astronomical objects, they relate to geology, since an analysis of their composition is a problem for the mineralogist. Although they come from remote distances in space, the fact was long ago established that meteorites consist of mineral substances which are found on the earth. Some of them are metallic, containing nickel and iron while others are stony, resembling igneous (volcanic) rocks.

By far the most important meteorites ever found in Illinois are the three which fell at mid-day at Tilden, 45 miles southeast of St. Louis, July 13, 1927. The two illustrated portions of these Tilden meteorites are now in the Illinois State Museum. Other pieces are in the Field Museum of Natural History, the U. S. National Museum, and the Museum of the State University of Iowa. Of the two shown in the illustration the one at the left weighs 9 pounds and the one at the right 46 pounds.

It might here be mentioned that the largest meteorite ever discovered in the United States, and one of the most interesting is the Willamette meteorite. It was found near Portland, Oregon, in 1902 and weighs 15 tons. It is now in the American Museum of Natural History. Supposedly the largest meteorite ever to fall on any of the continents is that which is thought to have formed the great Meteor Crater in Arizona, a circular depression nearly a mile in diameter and 570 feet deep.

THE FOSSIL COLLECTIONS

The fossil exhibits are designed to show something of the plant and animal life of prehistoric times.

Apparently most fossils are the result of plants and animals having been buried in sediment (mud) which later hardened into stone.

From the fact that fossil sea shells are found in rocks forming high plateaus or mountains, and impressions of fern leaves which may be seen in coal mines far below the surface of the ground, we must conclude that the earth is very old and that it has seen many changes.

Geologists have correlated the different rocks and their fossils and established what is called a geologic time table, designating the periods of earth history. The visitor can gain a clearer idea of the geologic story if he will study the exhibit on the west wall of the Geology Room entitled "Geologic Rock Column." This exhibit presents a world view of the rock formations in their relative thicknesses, showing the chronological order in which they were deposited. At the side of the column illustrations of fossil types characteristic of each system are shown. The Column represents a section of the earth's crust that actually would be about 84 miles in thickness. Here it is reduced to scale to a height of twenty feet. At no one place in the earth are all the rock formations to be found. The deposits are scattered over all the continents, and only after research extending over many years has the chronological arrangement as shown in the Rock Column been determined.

The many formations of the world's rocks have been grouped into what are called the five great Eras of Geologic Time. These are: the Archaeozoic, Proterozoic, Paleozoic, Mesozoic, and Cenozoic. Each era is characterized by certain kinds of rocks or by certain kinds of fossils, or both. The Cenozoic or most recent era, which is supposed to have lasted some sixty million years, is called the Age of Mammals as this type of life became dominant during Cenozoic time. The earlier Mesozoic Era, believed to have lasted more than a hundred and twenty million years, is called the Age of Reptiles as reptilian remains are especially abundant in these rocks. The still earlier Paleozoic, lasting three hundred and fifty million years, was the Age of Invertebrates, Primitive Fishes and Seed-Ferns, since these were the dominant forms at that time.

Archaeozoic and Proterozoic rocks, which underlie the others, contain few positive evidences of animal life. These are the earth's oldest rocks. Their age has been estimated at many hundred million years.

The rocks of the different Eras are subdivided into Periods and the Periods, which are named from the regions in which they are especially common, are divided into formations. Each formation represents a stage of time when this region was submerged beneath the sea, and each break between formations represents an interval when the region was exposed as land.



PALEOZOIC BRACHIOPODS
Dalmanella mecki. Madison, Indiana.

Fossils reveal many facts about the geography, climate, local conditions, etc., of prehistoric times. From the abundance of fossil sea shells, shark teeth, etc., it is evident that for a long time inundating ocean waters covered what is now Illinois. At other times the seas receded and tropical plants grew in profusion, accounting for the coal deposits.

Considering briefly the three fossil-forming eras, we shall begin with the Paleozoic which is particularly well represented in Illinois.

The Era is divided into the following Periods: Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, and Permian, of which all but the Permian are included in Illinois strata.

For the sake of acquainting the visitor with a few of the more important and characteristic of the Paleozoic fossils, a few are here illustrated and briefly described.

Brachiopods were shelled "molluscs" that lived in the ancient seas in unbelievable numbers. Their shells make up vast quantities of limestone. An interesting fact relative to these creatures is that even though they are found in some of the earth's oldest strata, they still are found living in the oceans of today, diminished, but fairly abundant. At least sixty species have been discovered that are identical in appearance to Paleozoic forms.

Brachiopod shells resemble those of clams, but actually the two animals are quite different. In the Brachiopod the two shells are known as the dorsal and ventral valves. Attached to one of the valves of most forms is a short stalk or pedicle which is a fleshy stem that anchors the animal to some rock or object on the sea bottom. Thus these creatures do not move about, but like corals, remain fixed to one place throughout life. The newly-hatched young, however, are able to swim about for a few days.

There are approximately 7,000 kinds of Brachiopods known to science. The shells exhibit a great variety in form and size. Some full-grown examples are so small that 300 of them may be placed in a cubic centimeter measure, while others are four or five inches across.

Nautiloids, like Brachiopods, are especially abundant in Paleozoic rocks. They are also found in Mesozoic and Cenozoic strata but today are represented by only a very few species. The Chambered Nautilus of the Indian Ocean is a survival of this ancient race.

Nautiloids were octopus-like molluscs having many arms or tentacles and having coiled or sometimes straight shells that were composed of a series of compartments or chambers. Only the outermost chamber was occupied, for as the animal grew it built successively larger chambers into which it moved. It is thought the abandoned compartments contained air or some other gas that served to buoy up the animal in the water.

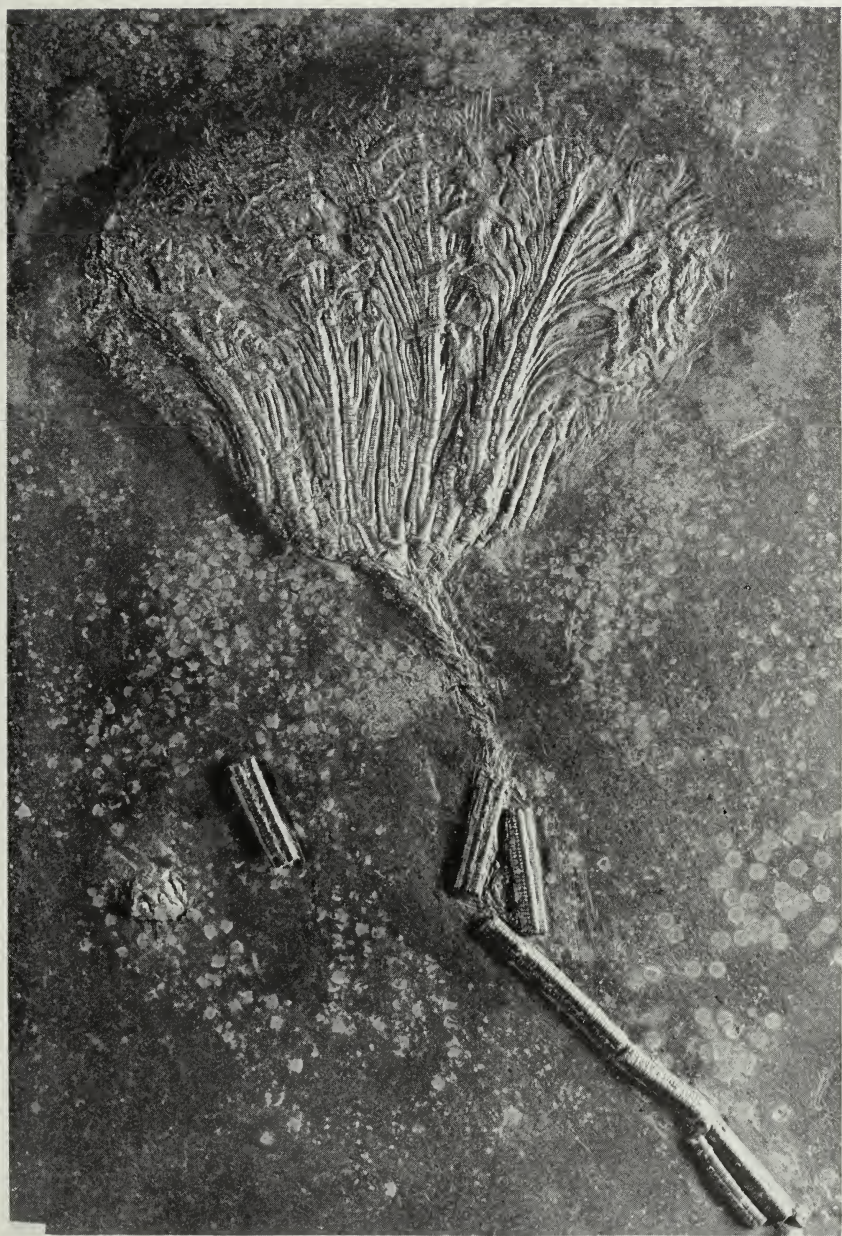
For some unexplained reason the race, which had attained such a remarkable development during Paleozoic and Mesozoic times, suddenly faded out during the late Mesozoic and almost passed into total oblivion.



A PALEOZOIC NAUTILOID, LITUITES

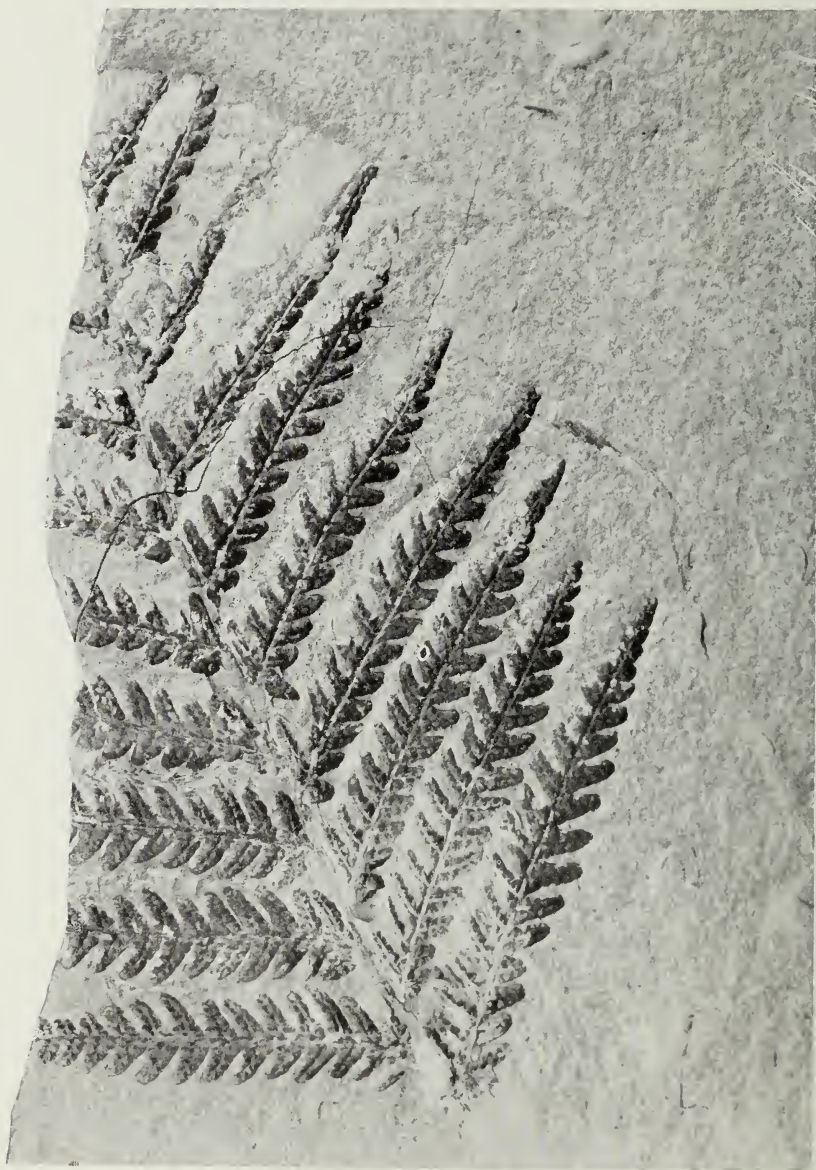
Crinoids are popularly known as sea-lilies or stone-lilies although they are animals and not plants. The name "feather stars" is more appropriate as they are often feather-like and are related to the Starfish. Nearly all the fossil forms were fixed to the sea bottom by a more or less lengthy stalk. Crinoids were exceedingly abundant in Paleozoic seas. Their remains, with the feather-like sprays of branching arms, are often beautifully preserved and the Mississippian rocks of western Illinois are especially noted for them.

Plant Fossils, although from nearly all geologic periods, are extraordinarily plentiful in the "coal measures" of the Pennsylvanian Period. Hundreds of species of ferns and fern-like plants have been found in Illinois coal deposits that were formed from the accumulation of vegetation in the dense forests and swamps of ancient times.



A CRINOID OR "SEA LILY", PENTACRINUS

This specimen is from Holzmaden, Germany.



FOSSIL FERN LEAF, *PECOPTERIS*, FROM BRAIDWOOD, ILLINOIS
Courtesy of Illinois State Geological Survey.



RECONSTRUCTION OF SWAMP FOREST IN PENNSYLVANIAN TIME
After H. Potonie. Courtesy Illinois State Geological Survey.



FOSSIL SEA LIZARD, ICHTHYOSAURIA

Marine Reptiles of the Mesozoic, they are best known from England and Germany where they are found in extraordinary numbers. The specimen shown is from the Jurassic of Wurttemberg, Germany, and measures more than seven feet in length.



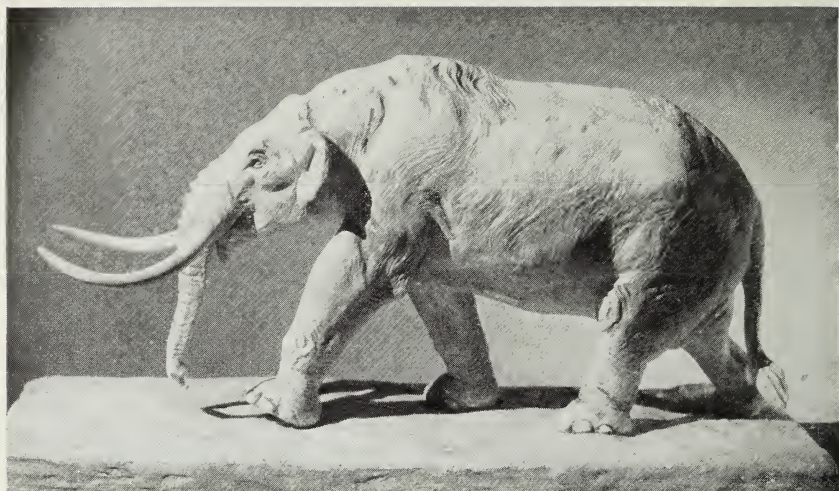
DINOSAUR TRACK, FROM CONNECTICUT

The *Mesozoic* Era is not well represented among Illinois rocks, but a number of the unique fossils found in these deposits are exhibited in order to indicate something of this interesting middle period of earth history. Some of the most unusual and bizarre of all creatures that ever inhabited the earth lived during the *Mesozoic*.

At the present time reptiles occupy a comparatively unimportant place in the world of animals, but they were by no means so insignificant during these earlier times. As Scott has said "they filled all the roles now taken by birds and mammals; they covered the land with gigantic herbivorous and carnivorous forms, they swarmed the sea, and, as literal dragons, they dominated the air."

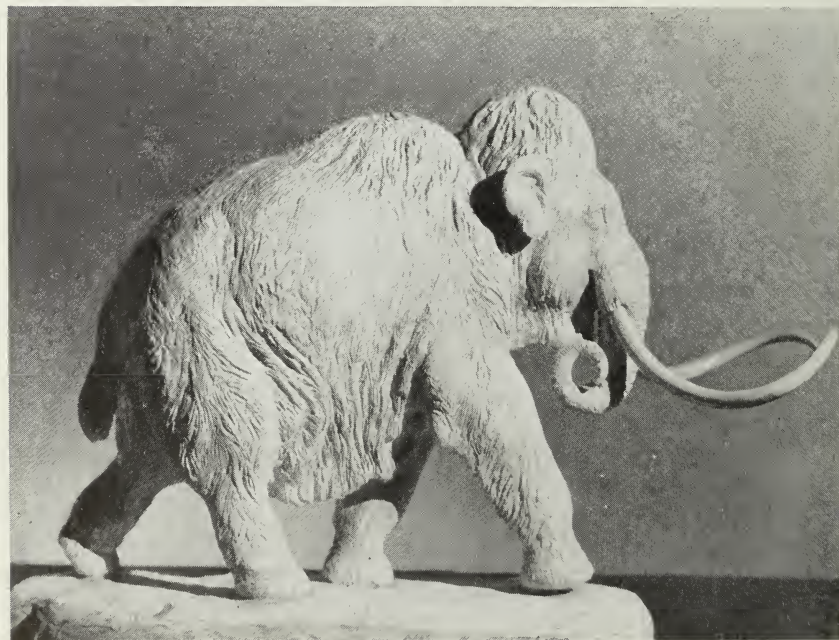
Dinosaurs are the most remarkable of all the *Mesozoic* reptiles. Some of these attained enormous sizes. A series of Dinosaur models in the Geology room shows several of the different kinds whose remains have been found, principally in the Western States. Some of the first evidences of these creatures to be discovered were their footprints (illustrated above.) in the red sandstone of the Connecticut River Valley. Since many of the tracks were three-toed they were first thought to have been made by birds. Now they are known to be tracks of dinosaurs which ran on their hind legs as do the birds. Similar tracks are found in Pennsylvania, Virginia and North Carolina, and in many other places in rocks of the *Mesozoic* Ages.

Other Reptiles of the Era were the Sea-lizards (illustrated), the Giant Sea Turtles and Flying Reptiles (the *Pterodactyls*.)



MASTODON

Restoration by Charles R. Knight, Model in State Museum.



MAMMOTH

Restoration by Charles R. Knight, Model in State Museum.

The *Cenozoic*, the most recent of the Geologic Eras, saw the decline of the reptiles and the dominance of mammals. The Era is divided into several periods, the latest of which, the Pleistocene, is represented in Illinois. The Pleistocene is the so called Ice Age, or Glacial period, and was characterized by the development of immense ice-fields upon the lands. It was a period of extensive refrigeration. There appear to have been several glaciations, which alternated with warm climates. The melting of the ice left vast deposits of "glacial drift" and this material provides us with many fossils. The most striking of Pleistocene mammals whose remains are found in Illinois are the Mastodons and the Mammoths.

Mastodons were elephant-like "proboscidea" (animals with trunks) which differed from the mammoths and present day elephants in the structure of the teeth and in other points as well. They must have looked very much like other elephants, although the head was flatter, the jaw longer, and the tusks less curved than those of the mammoth.

As it ranged well into the north it seems probable that it was covered with hair. Regarding its size, which is popularly overestimated, the largest thigh bone yet found is slightly shorter than that of a large Indian elephant. Tusks reached an occasional length of nine feet, but seven or eight feet is the usual size.

The *Mammoth* is better known than the mastodon because actual frozen carcasses of at least one species, the Northern Hairy, or Siberian, Mammoth have been found in the soil of northern Siberia. It was a true elephant, similar in many respects to the modern pachyderms of India and Africa except that it was covered by long shaggy, reddish-brown hair and had more curved tusks. Bones and teeth of animals identical in species to those found in the flesh in Siberia have been unearthed in many parts of northern Europe, Asia, Alaska, United States and even Mexico and South America.

Apparently these huge mammals migrated from Asia to America over the land bridge now submerged beneath the waters of the Bering Strait.

One of the most important mammoth discoveries made in Illinois was that at Golconda, Pope County, in 1926 when workmen excavating for a dam uncovered an ivory tusk in a clay bank. Upon investigation other bones were found and all that could be saved were removed and are now exhibited in the Geology Room (see illustration). The parts shown include the entire left tusk, the front of the skull, a thigh bone, shoulder blade, and several teeth. Numerous other fragments of bones and teeth of both mammoths and mastodons which have been recovered in various parts of the State from time to time are shown near the case containing the Golconda specimen.

Only very rarely have mammoth or mastodon remains been preserved well enough for the entire skeleton to be saved, so that mounted skeletons of either species are rare in museums, although teeth or odd bones may be found in many institutions. No doubt many fine fossils



EXCAVATING THE GOLCONDA MAMMOTH

have been lost to the world of science because of indifference or lack of knowledge on the part of people discovering them.

The two most frequent questions asked about these prehistoric animals is When, and Why did they become extinct?

Since some of primitive man's flint weapons have been found together with the remains of mammoths, especially in southern Europe, it is fairly certain that early man and the mammoth were contemporaneous. On the walls of the caves of southern France and Spain are to be seen crude outlines that unmistakably are drawings of the mammoth. These were made by the Cro-Magnon race which inhabited those regions perhaps fifteen thousand years ago.

While evidence is scant, it would appear that the early inhabitants of America also knew the mammoth and perhaps the mastodons as well.

Why the creatures so suddenly disappeared is a matter of conjecture. Although various theories have been advanced nothing is known for certain except that they did completely die out many hundreds of years ago. Because of their extensive range in Europe and America it is not likely that they were exterminated by primitive human hunters, nor were there any other creatures that were physically able to annihilate the entire race. It would seem that they could hardly have perished from the cold, for which they were suited with their shaggy wool, nor could they have been exterminated by starvation as there was ample vegetation on the icy tundras where they lived.



PORTION OF MAMMOTH SKELETON SHOWN IN STATE MUSEUM

Thigh Bone—46 inches long, 9 inches wide

Left Tusk— $7\frac{3}{4}$ feet long, 7 inches in diameter

Left Shoulder Blade (Scapula) 34 inches long, 21 inches wide

Front of Skull—36 inches high, 32 inches wide

THE ANTHROPOLOGICAL EXHIBITS

By Frances Summers Ridgely

With one exception the Anthropological Exhibits are housed in the East Hall. Collections represent the American Indian, both pre-Columbian and historic, the Eskimo, the Oriental, the South Pacific Island people, West African, and the Family Tree of Man. The nature of most of the exhibits brings them under the subdivision of ethnology.

The Indian Group centered in the south wall of the Main Hall shows a family of Sauk-Fox Indians on the banks of the Illinois River near Peoria. The old chief, before the fire, is watching the approach of two of his band with a Sioux prisoner who is forced to carry a heavy pack of skins. The woman in the doorway is more interested in her corn grinding than in the prisoner, the girl is concerned and pitying, the boy, pleased at the thought of a possible savage spectacle. Their bark house is a permanent home, part of a village surrounded by corn-fields, though for months at a time they might live in the portable skin tipi, (Pronounced teepee) or in a dome shape wigwam.

This group is the gift of John W. Bunn of Springfield and the work of Henri Marchand.

History of Indians in Illinois must always remain vague. Illinois was always a great cross road. Sioux from the north and Iroquois from the east, careless of distance, often came to harry the more settled Illini. Miamis of Illinois and Indiana usually sided against their Illini relatives. The Potawatomes moved into the Chicago region.

The Sauk, sometimes called Sac, and Fox Indians, both descended from Algonkian stock were probably one tribe at a long ago date. The Sauk driven from their homes on the St. Lawrence by the fierce Iroquois, moving west clashed with the Wyandottes and themselves became very warlike. When joined by the Fox they took the offensive against the Illini.

We hear first of the Illini (called Linnaway and Ilinawek) through Father Alouez in 1665. A confederation of Kaskaskias, Cahokias, Tamaroas, Peorias and Michigamies, they claimed the central plain from the water-shed of the Wabash to the Mississippi. Well disposed to French priests and explorers, they fought for the French against the Cherokees and Choctaws. In 1678 the Iroquois with slight excuse again attacked them, almost crushing this diminishing people. In 1682 the founding of Fort St. Louis gave the Illini a respite but not for long. In came Sauks and Foxes, Kickapoos and Potawatomes, fighting bitterly over a number of years. The Illini were reduced from a prosperous nation to a remnant of five hundred.

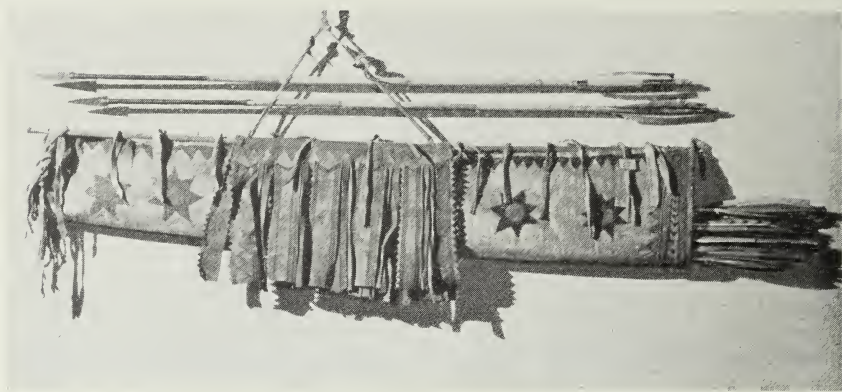
In one of these savage struggles, tradition says that a party of Illini took refuge on a bluff overlooking the Illinois river. Their only retreat cut off by the waiting enemy, they died, all but one old woman, on this bluff of tragic memory—since named Starved Rock. A miniature group by Dwight Franklin, in the Museum shows the defiant, starving Illini on the bluff.

The remnant of the Illini settled at Rock Island. The Sauk-Fox, settling near Peoria, were later displaced by the whites and moved across the Mississippi under the distinguished Keokuk, in days of better recorded history.



ILLINOIS INDIAN GROUP GIFT OF JOHN W. BUNN

Sauk-Fox Indians were prominent in early Illinois history.



PAINTED QUIVER AND ARROWS

APACHE INDIAN

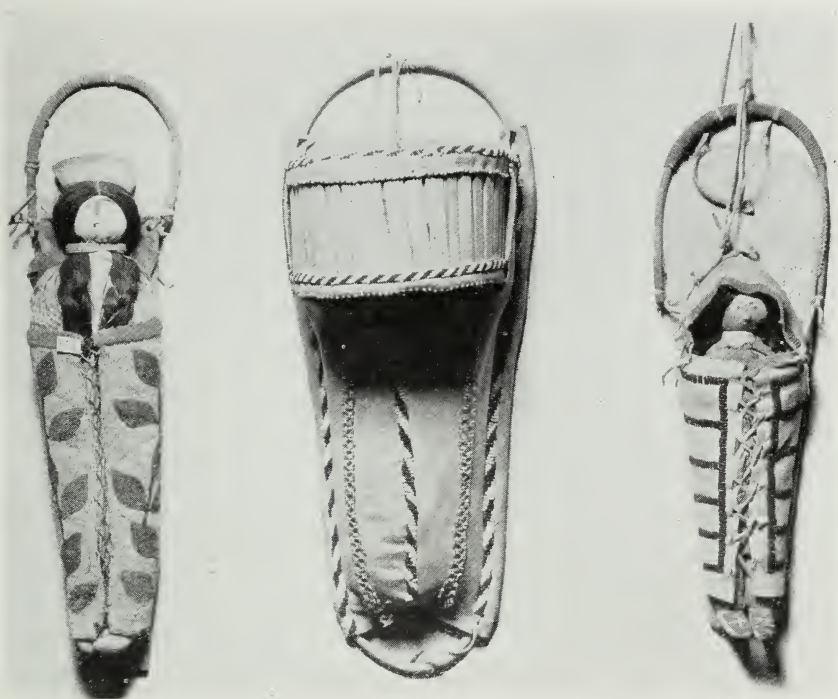
The American Indian Exhibits, except for the Indian Group, and the Prehistoric Collections are almost entirely from the Thomas Condell Estate Collection. They show the work of Indians of the Plains, California, North West Pacific Coast, Eskimo and Southwest Desert. In the last group are the nomadic Navajo and Apache and the Pueblos, who live in their ancient communal houses.

Ceremonial Objects which fill such an important place in Indian religious life occupy the first west wall case. These differ less in use than in material available for their manufacture. The Plains Indians used breast plates of deer and bird bone, painted skin drums and rattles and the long peace pipe. Best known to us are their Sun Dance and Dog Dance. "Dance" is not rightly descriptive of Indian rites, which are prayers for rain, for health, for the beginning of mature life, and thanksgiving.

Plains Indians are those of romantic legend, who lived by hunting deer and buffalo which furnished food, clothing and housing. They lived in the painted skin tipi and for dress occasions wore elaborate feather war bonnets and the fringed and beaded buckskin. In the opposite case are shown the beaded clothing and the trappings of their horses. Among Plains Indians, the best known are Sioux and Black-foot.

Pueblo Indians use for ceremonies embroidered white cotton or skin dance aprons painted with symbolic figures, elaborate painted masks and head dresses, rain drums of hollow logs, turtle shell rattles, feather tipped prayer sticks, wooden flutes and whistles.

Because these Indians have lived for centuries in one place they have kept their old ceremonies, and the traditional costumes and accessories for them. The Hopi Snake Dance, in reality a prayer for rain, has more thrills and chills for the tourist than any other ceremony.



INDIAN DOLLS IN CRADLES, MADE FOR TOYS

A number of Kachinas, the small images of the spirits who dance in the many ceremonies, are displayed in the adjoining case, dressed in the costumes of tradition. Especially among the Hopi the variety of these Kachinas seems endless. Only recently has it been possible to openly secure these charming little figures, without arousing resentment among the older Indians. At the time when the Gods go back to San Francisco Peak to spend the winter, Kachinas are often given to the children, not for toys, though they look like dolls, but to be most carefully treasured.

In the same case are shown a number of dolls—carefully made from scraps of buckskin, with real hair that braids, removable mocasins, and neatly beaded cradles. Indian children have no lack of toys, tops, and pets.

There is a surprising variety in style and material used in making the cradles or papoose carriers which keep the Indian baby safe. Of the materials which were close at hand, some are poorly and rudely made, others show great care and artistic ability in their construction. These cradles could be hung from a convenient branch, leaned against a tree or a tipi pole and the baby would be entirely safe while the mother went about her many tasks.

Students of design will find much of interest in the Museum's large collection of baskets. The harmony or the contrast of soft colors, as well as the limitations imposed by materials and types of construction, show what amazing skill these artists possess. Baskets are of all sizes from great storage and carrying jars, pitch covered water bottles and food containers tightly woven to hold water, to tiny trinket boxes of the finest grass, decorated with beads and feathers woven into the patterns.

Among the California Indians those baskets which are most unusual are woven by the Pomo. One, a sun ceremonial basket is decorated with crests of 108 California quail, a design in red, yellow, blue and green from crests of small birds, and twenty-four strings of wampum with abalone pendants. The more beautiful are entirely in basket materials with a wealth of fine geometric design.

California Indians had the most unfortunate contact with the white races of any group. They easily gave up their heritage, and live as squatters or on repurchased land. They are decreasing rapidly. About twenty tribes are represented in the Museum collection.

North Pacific Coast Indians—classed as those which live along the fringe of the Pacific from the Columbia River to Mt. St. Elias in Alaska—have given the basket maker's art its highest form of expression. Twined, coiled and woven, of many different native materials, decorated with wrapped twining, false embroidery and also by imbrication, a stitch used nowhere else in the world they have an almost mechanical perfection.

These Indians are also excellent workers in wood, building huge canoes of cedar, fit for ocean travel. These are decorated with the totem animal of the owner, as are almost all possessions. A totem is an animal patron and protector. We find totems tattooed on the bodies of these people, carved on the corner posts of their large flat topped wooden houses, and on great cedar poles before their doors. Most of the totem poles however have now found their way into Museums.

Eskimo women from Attu—the most westerly island of the Aleutian chain, have woven the thinnest, and most delicately finished baskets. Decorated with small designs in wool embroidery, they are as soft as panama hats.

Navajo no longer weave baskets, preferring to buy them from Piate and Apache who are willing to weave Navajo designs for them. The Museum has old Navajo trays, commonly called "wedding baskets" decorated with a zig zag design in soft red and black—with a break in the pattern for proper placing of the basket by medicine men during ceremonies.

Apache baskets are sturdy, light of background, decorated with bold black geometric designs or animal forms. The Apache live on several reservations in southern New Mexico and Arizona. They are called Jacarilla, Mescalero, etc., from their location. Sometimes living



PIMA INDIAN BASKETS

in tipis, by preference they live in brush wickiups, seemingly more interested in a screen from curious outsiders than in a shelter for their possessions.

For about two hundred years these Indians were the scourge of the peace loving Pueblo tribes, raiders and marauders so skillful that when it became necessary for the United States Army to patrol the frontier, it took forty years of continuous struggle to conquer them. With the capture of Geronimo by General Miles, the trouble ended. Freed and at last returned to their desert home country, this band with the rest have become, to a limited extent, farmers and stock raisers.

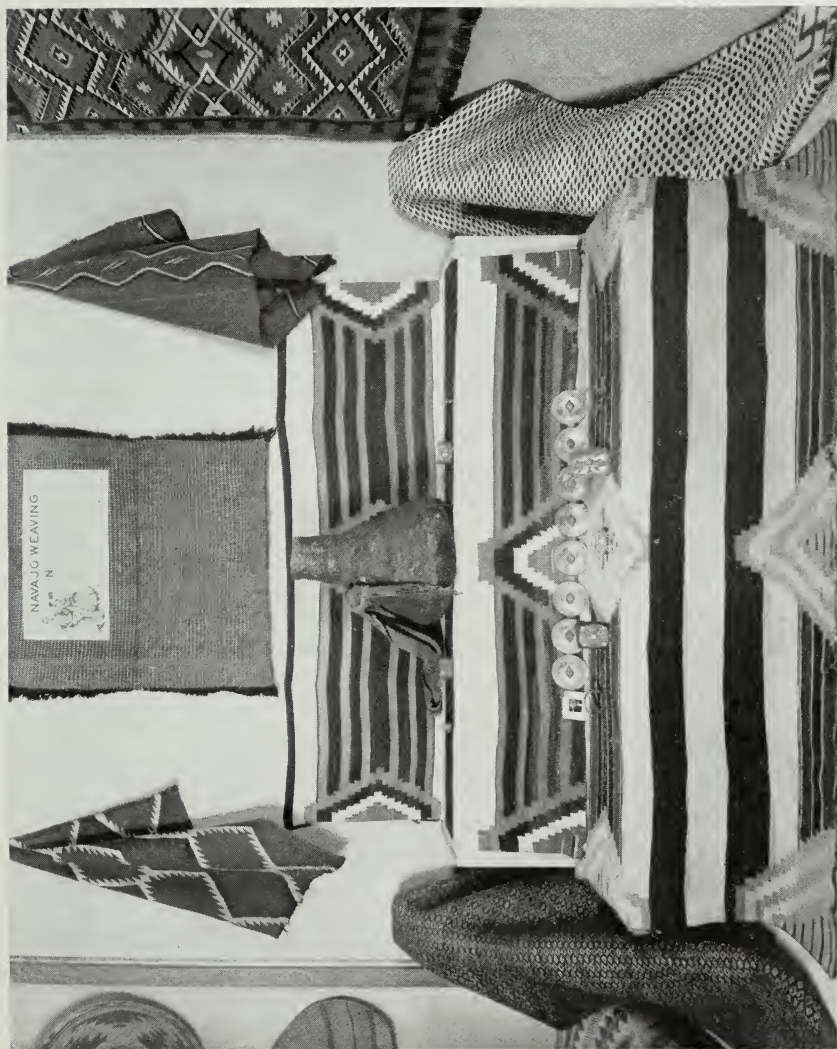
Pima Indian baskets vary from small straight sided food containers and big trays and storage jars, to a strong framework of poles with which heavy burdens may be carried on the back, supported by a woven head band. Pimas of southern Arizona live sometimes in earth lodges, but they seem to prefer a lodge of poles covered with reeds, called a wickiup. These desert farmers raise wheat, beans and cotton with the aid of irrigation.

Hopi Indians make baskets which are markedly different from those of other Indians. Many are wicker, especially flat ceremonial trays, some are made with a heavy coil of yucca fiber and all have large distinctive designs—the brightest of any Indian baskets. These people live far from the beaten path on three high mesas in Northern Arizona in nine villages built in the form of huge communal houses. While they live in villages, they are agricultural people, growing corn, beans and melons in favorable spots in the desert. They add a great deal to their incomes by making pottery and baskets. They weave white cotton cloth, and also wool, with designs differing greatly from those of the Navajos.

Pueblo is a name bestowed on the town dwelling Indians of the desert by the Spaniards who entered the country from Mexico in 1540. At that time there were about seventy of these great communal houses in use, now there are twenty-seven. A majority of these are located in the Rio Grande Valley in New Mexico, but the Hopi mentioned above live in northeastern Arizona while Zuni, Laguna and Acoma are near central New Mexico. Acoma contends with the Hopi pueblos of Oraibi and Walpi for the honor of being the oldest continuously settled town in the United States. Of the many ruins of ancient pueblos of the Southwest, those most familiar are Cliff Palace and Pueblo Bonito.

Navajo Blankets have an important place in the Indian collection. Many of them are the fine old "bayeta" of red and rose pink wool. An English baize, called bayeta by the Spanish was often unravelled, and rewoven into Indian blankets. Some are of fine Germantown yarn rewound and woven, but many are of both native wool and dye. Two chief's blankets shown on the opposite page are striking with wide black and white stripes alternating with bands of brown, rose bayeta, and black, decorated with the ancient Saltillo diamond design. There is an amazing variety of design and weave displayed here which show the artistic ability of the pastoral Navajo. The Navajo claim that the Spider Woman taught them how to weave but the Pueblo Indians insist on taking the honors from the spider.

The Navajo, like the Apache, are wanderers. They live in earth covered hogans, moving with the needs of the flock for new pastures. Not only are these people noted weavers but also they are the silversmiths of the Southwest, making belts, rings and bridle ornaments of great beauty, another art learned from their Pueblo teachers. They are also fine horsemen. They are very reserved.



NAVAJO INDIAN BLANKETS AND SILVER JEWELRY

The broad stripes were reserved for Chief's blankets.

Pottery is still made by the Pueblo Indians much in the manner of hundreds of years ago—without the use of the potter's wheel. On a saucerlike base of damp clay the potter, who is usually a woman, builds up the sides of the vessel with a soft damp coil of clay, smooths, turns, and molds it with her fingers and a curved piece of a broken pot until the desired shape is reached.

After being sun dried, scraped, and smoothed with a stone it is given a high polish or dull coating called a slip, decorated, and fired outdoors. Decorations may be geometric, conventionalized life forms or purely realistic. They are painted with home made yucca fiber brushes, with so much accuracy that no preliminary measuring and spotting is necessary.

The ware that now is being made for tourists has a much inferior design quality to the pottery made even forty years ago. The pieces in the Museum are of at least that date and many of them much older. It is still possible to recognize the ware from the various pueblos, as the designs are in a way traditional. The clay from the different localities shows differences as well. In the old pieces one seems always to find a break in the continuity of the design—not an imperfection but deliberately left it is said, to allow the spirit of the vessel to escape without breaking the pot.

Among the most pleasing designs, are those from Tsia, Santo Domingo, Acoma and the Hopi pueblos. Tsia or Zia, uses a variety of strong, half realistic birds and floral forms in especially happy combinations, Acoma uses an all over decoration of geometric form or a modification of Tsia designs, and Santo Domingo makes sturdy jars of fine shape with bands of bold geometric pattern. Hopi designs are often rain symbols, highly conventionalized birds or bird's wings. In contrast are the rather stringy and carelessly made designs of Cochiti and Zuni pieces.

Excellent undecorated pieces are the plain red polished ware from San Juan and the highly polished black from Santa Clara. In prehistoric Southwestern pieces, the most interesting are the fine examples from Casas Grandes, over the Mexican border. None of the later pieces can compare with this pottery of several centuries ago in quality of workmanship and decoration. There are also exhibited red effigy jugs, tiny black jugs, and black on white pieces from the Cliff Dwellers.

Prehistoric Illinois Pottery and that from Arkansas and Missouri assembled by Prof. William McAdams, an early archaeologist from Otterville, is much more primitive than that of the Southwest. The pieces exhibited are from Jersey, Madison, and St. Clair Counties. This county last mentioned is the location of the largest group of mounds and the largest mound north of Mexico. The effigy pieces on the left of our illustration, (next page) both from Madison County are of good finish and careful modelling. Another good effigy bowl is a beaver with a stick of wood in his mouth—a part of the Governor Henry Horner Collection.



PREHISTORIC ILLINOIS INDIAN POTTERY

The Governor Henry Horner Collection is the newest addition to the material on the prehistoric Illinois Indian. It was selected by the Governor from the Payne Stone Age Collection and is at present being reinstalled. It consists of burial urns, effigy pots, mortars, projectile points, discoidals, banner stones, and birdstones, and personal ornaments.

There is also a Mound Builders Exhibit collected by Professor McAdams containing shell, copper and mica ornaments and fragments of textiles ornamented with copper beads from the burial urns excavated from mounds in Illinois.

FOREIGN ETHNOLOGICAL EXHIBITS

The South Pacific Island Exhibit is of old textiles, from Hawaii and other islands, Javanese batiked cloth, shell ornaments, Fiji war clubs and other weapons. A recent collection from the Philippine Islands, of textiles, weapons, garments and ornaments includes dolls dressed in modern Philippine costume. Loaned by Mr. George J. Kable of Springfield, Illinois.

The Greenland Eskimo Exhibit consisting of bone implements, dog harness, ivory and a large kyak, the light skin covered hunting boat, was collected by Dr. Edward Everett Vincent on the First Peary Expedition to the North Pole. Loaned by Mrs. Edward Everett Vincent of Chicago.

Mexican Exhibits are chiefly from the great Pyramid of the Sun, at San Juan Teotihuacan, east of Mexico City. They are small well modelled heads of clay of unknown use, once to be found there in numbers. There are also a number of pieces of weaving done by Mexican craftsmen, including the old Chimayo pieces.



JU JU OR FETISH

GAMBIA WEST AFRICA

The West African Exhibit is modern. Woodcarvings are the interesting feature, typically primitive with few exceptions. Above is a ju ju or fetish from Gambia. An unusual ju ju from Senegal is of ebony with bone inlay, representing a woman with many rings about her neck which has been elongated by the ornament. The masks are more realistically human than the totem masks of the North West Indians, who modified human features to represent animals. Baskets shown depend for decoration on coils of different colors. They are a bit like those of the Hopi except for lack of definite designs. Textiles, metal and leather work, with their small designs contrast greatly with their bold woodcarving. Collected and loaned by William H. Clayton, Springfield, Illinois.

The Orient is represented in the Museum collections by the work of the Chinese and Japanese craftsmen. The Chinese lapidary usually works in very hard materials and uses few tools, while the Japanese uses a great number in making his small exquisite objects of ivory, wood and bone.

The Chinese Case includes porcelain, carved ivory and alabaster figures and a large green jade scepter with a lotus shaped overlay of white jade. The overlay is carved with conventional symbols of longevity and happiness. This sceptre is rather an emblem of personal good fortune than a mark of royalty. In this case we also have a collection of carved rhinoceros horn cups.

Rhinoceros Horn Cups are one of the rarest things in Chinese art. Only the pressure of most dire need will force the possessor to



CARVED RHINOCEROS HORN CUP

CHINESE

part with one. Tradition is that a cup made from this horn will show presence of poison immediately, and since the Oriental sometimes administered potions as a quiet and polite means of ending an undesired acquaintance, a cup that assured as well as cheered might well be a valued accessory to long life and to the enjoyment of its more relaxed moments.

From very ancient times the horny ornament upon the snout of the ambling Indian Rhinoceros has been credited with magical virtues and medical powers, and this inconvenient appendage has caused him to be hunted to extinction. In the western world the rhinoceros was sometimes the foundation for the fable of the unicorn. The horn of a unicorn was sent by the brothers of the Monastery of St. Mary of Guadalupe in Spain as a most precious gift to Pope Gregory in 1590. Five inches of the tip of the horn were removed, powdered and administered to him in his last illness—unavailingly. The rest of the precious object, together with its embossed leather case is now in possession of the American Museum.

Still regarded as a curative in the East, it brings five times the price of elephant ivory per pound and is especially valued by the Chinese. Their craftsmen have transformed the venerated material into cups of graceful shape and most fantastic ornament, expressing their feeling in the subtle curve of writhing dragons and other crawling sinister figures.

The Museum is fortunate to possess these cups from the Thomas Condell Estate Collection since there are few other Occidental Museums known to have them, these being the Victoria and Albert in London, the Metropolitan in New York, Minneapolis Institute of Arts and Field Museum in Chicago which has one hundred.

The Japanese Case contains a hundred inro and their necessary complements, the exquisitely carved netsuke. The inro is a small multiple case, carefully fitted together, formerly an important part of the costume of a Japanese gentleman. Since his clothing had no pockets, medicine, seals and other objects were carried in the inro, which was worn hanging from the belt by a cord attached to a button like ornament, the netsuke (pronounced netski). These two articles though of everyday wear, were of the most beautiful workmanship, and perhaps to some extent filled the place of jewelry, which was not worn by these beauty loving people.

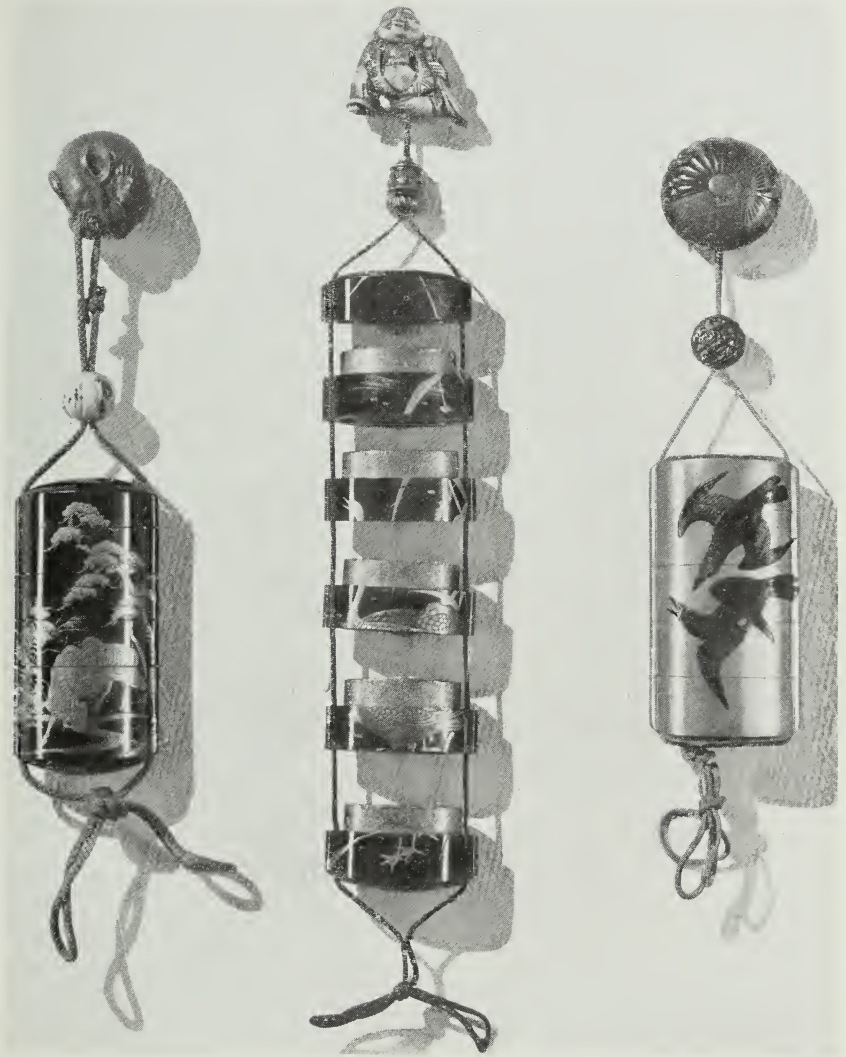
The inro themselves are charming small bits of lacquer, metal or cinnabar beautifully decorated, but the netsuke ascends into the realm of sculpture. While they are of a great variety of materials, the finest are those of wood and of ivory, probably made early in the eighteenth century though some are of much earlier date.

The netsuke presents an endless variety—sea animals of all sorts, mice, monkeys, rabbits, fruits, and human figures, carved in the round. Often they are highly humorous, satirical or dramatic. A most popular subject is Daruma, shown in the center in our illustration, a comfortable, smiling gentleman who is said to have remained seated in meditation for nine years, which may account for his avoirdupois as well as his Buddhistic piety.

MISCELLANEOUS EXHIBITS

The World War Exhibit is also located in the east hall. It was assembled by Mr. Kent D. Hagler, who served as an ambulance driver with the Harvard Unit of the American Field Service. It consists of weapons, grenades, hats, helmets, gas masks, canteens, buttons and insignia of the American, British, French and German troops. Gift of Mr. Kent Dunlap Hagler, Springfield, Illinois.

The Grover Exhibit of Weapons, located in the west corridor, collected by Frank R. Grover of Evanston, shows primitive weapons from the war club and Indian bow and arrow, Roman crossbow, flint-lock, muzzle loader and percussion types to revolving cylinder weapons. There are guns from the Revolutionary, Civil, Mexican, Indian and World Wars. Among foreign pistols are English, French, German, Belgian and Oriental weapons. Also shown are spears, knives and swords, among the most interesting being the Malay kris, bolos, machetes and stilettos. Gift of Mrs. Ella Grover Forster and her son, Mr. Mortimer C. Grover, Evanston, Illinois.



INRO AND NETSUKE

JAPANESE



STAIRWAY APPROACHING ART GALLERY

THE ART GALLERY

By Frances Summers Ridgely

The Art Gallery is the youngest department in the Museum, having been established in 1928 through the efforts of the late Dr. Crook, then Chief of the Museum and Mr. Jules Cornelius member of the Board of Advisers, also deceased. The reason for the founding of this gallery is best explained by the following paragraph from Dr. Crook's writings.

"While for seventy-five years the State Museum has given its chief attention to objects which illustrate Nature, of late years it has enlarged its scope and brought into its exhibits, objects that show the activities of man. As stated in the Civil Administrative Code, its purpose is 'to collect and preserve objects of scientific and artistic value, representing past and present fauna and flora, the life and works of man, geological history, natural resources and the manufacturing and fine arts.' "

The above reason for the opening of a permanent gallery of art for Illinois—presumably the first of its kind in the United States is not the only useful purpose to be had in mind. There is a need for several objectives yet to be achieved, as follows;

To bring about a closer cooperation in the varied art interests of the state; to provide loan exhibitions for the State Museum, State



ELAINE

OTHMAR HOFFLER

University, Normal Schools and Colleges which would make original works of art available in all sections of the state and to provide a central organization in which local groups might have an adequate and fair representation; also to encourage all departments of state and civic bodies to give the artists of Illinois a preference when granting commissions where such preference is reasonable.

While the plan is to include the various branches of the fine arts, to date the collection as displayed is confined to oils, sculpture and miniatures.

Beginning with ten gifts from interested organizations and from individuals, the Museum has purchased additions as convenient, and



WITH THE SUMMER BREEZE

JAMES TOPPING

has also received other gifts, until now it displays sixty-eight oil paintings, eight sculptures, two wood carvings and four miniatures and a number of loans in addition.

Ascending the main stairway to the art gallery, located on the sixth floor, one faces a statue of "The Young Lincoln" by the dean of Illinois artists—Lorado Taft which is one of three gifts of the Native Daughters of Illinois. Another small sculpture of classic simplicity is the head of a nun by William MacDonald.

Through arched openings at the east and west ends of the gallery one may look out over the Main Hall. From the floor of Main Hall may be seen the painting "Elaine" by Othmar Hoffler centered on the east gallery wall. Elaine, the Maid of Astolat, sits dreaming before Lancelot's shield unable to forget the perfect knight whose allegiance was pledged to Queen Guinevere. This painting won the first prize for popularity in our fifth annual exhibition in 1931.

Among the landscapes, might be mentioned "With the Summer Breeze" by James Topping, illustrated here, "Mountain Ranch" by Orin White, "Lakes of the North" by John Spelman, "Sentinels" by



NET MENDERS

E. MARTIN HENNINGS

Rudolf Ingerle, a painter who likes mountain people, and also mountain landscapes, as this one of Autumn in the Great Smoky Mountains.

Portraits of especial interest are "Anno 1814" by Oskar Gross, "A Little Tangier Beggar" by Marshall D. Smith, and "Dove" by Indiana Gyberson. Other paintings deserving mention are "The City" by Carl Preussl, which won the Joseph Eisendrath Prize in 1926 at the Chicago Art Institute, "Temple Offerings, Bali" by Frederick Grant which shows his rich sense of color and design, and "Net Menders" by Martin Hennings, also illustrated above. This artist is now chiefly interested in painting Indians of the Southwest, especially near Taos, New Mexico.

Carl Hallsthammar who cartoons with a knife much as others do with a pen, is represented by two amusing woodcarvings—"The Scotch Church Collection" and "Between The Acts." Hallsthammar was a pupil of Zorn.

Many other artists represented in the collection can not receive the notice due them, because of lack of space.

BRIEF HISTORY OF THE MUSEUM

The present is a fitting time that some mention should be made of the men who have guided the destiny of the State Museum, consequently, a brief statement concerning each Curator or Chief, together with a photograph, is given.

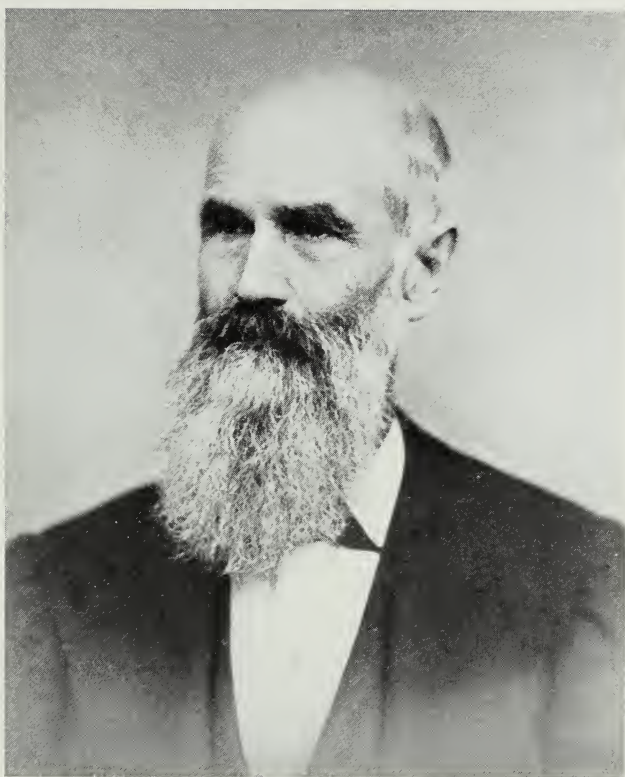
The State Museum is considerably older than the structure in which it is housed. The present quarters have been occupied since the completion of the Centennial Building in 1923, but the institution was begun many years before that time.

The Museum had its origin in the first State Geological Survey which was created in 1851. It was the duty of the State Geologist to collect and preserve geological specimens of the State and from these early collections of Illinois fossils and minerals the present Museum has developed.

The geological collections that formed the nucleus of what is now the Museum were not miscellaneous but were of recognized scientific importance. They were started at a time when little had yet been done in geological science in North America and Illinois was exceptionally rich in mineralogical and fossiliferous deposits. The professional quality of the field work and the scientific descriptions published were of a high order so that the collections came to be known among scientists throughout the world. D. D. Owen, the noted Indiana authority, wrote as early as 1853 "respecting the collections made on the Illinois Survey, which I have inspected, I have to state that I consider it the finest collection ever made in the same length of time on any survey that has come within my notice. The collection is both rich in minerals and fossils; some of rare beauty and perfection." Numerous type specimens (the first of their kind to be discovered) still bear the names of the early founders and curators of the State Museum—Norwood, Worthen, Lindahl, etc.

Although it began as a geological series, the museum collections were extended to include other natural sciences and with the organization in 1905 of the new Geological Survey, now located at Urbana, the State Museum became less of a geological center and more of a general museum of natural history, and, more recently, of art, as well.

It seems proper that mention should here be made of one who served as a capable assistant to each of the past curators and chiefs from the early years of the Museum down to the most recent. Miss Fannie Fisher who began as Assistant to the Curator under the first head, Professor Amos Worthen, continued under each of his successors until her demise which occurred in 1935 after more than fifty years of service to the Museum and to the State.



A. H. WORTHEN

State Geologist—1858-1877

Curator of State Museum—1877-1888

Amos Henry Worthen may properly be called the father of the State Museum. To Professor Worthen is due the first important researches in Illinois Geology that gained for the mineral and fossil collections such a wide reputation among scientists the world over, and it was largely his efforts, both in assembling these materials, and in promoting the necessary legislative measures, that led to the establishment of the Museum by the General Assembly in 1877.

Professor Worthen was born in Vermont in 1813. As a young man he came to Illinois and settled at Warsaw, on the banks of the Mississippi, where he taught school, and went into business. The vicinity about Warsaw is peculiarly rich in fossil and mineral deposits and these soon became his chief interest. By collecting the specimens in this locality and exchanging them with other collectors he gradually gathered an extensive and valuable geological museum and acquired the knowledge that fitted him for his professional career as a geologist. Professor Worthen died at Warsaw in 1888.

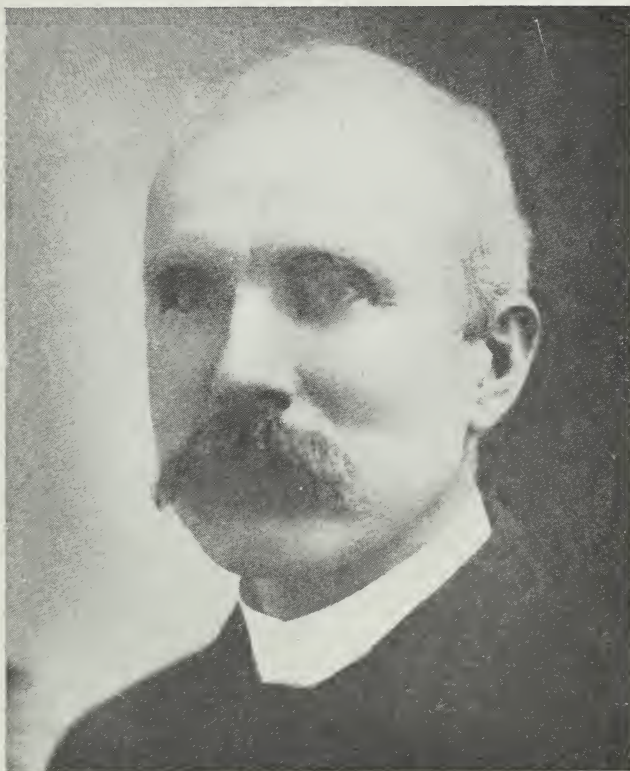


JOSUA LINDAHL
Curator, 1888-1893.

Professor Josua Lindahl, Ph.D., an able zoologist and geologist, succeeded A. H. Worthen. For ten years before coming to Springfield Dr. Lindahl had been professor of natural science at Augustana College where he had built up a valuable school natural history museum.

A native of Sweden, Lindahl was born in 1844. Before coming to this country he was assistant in the Royal Museum of Natural History at Stockholm, and had been a member of several scientific expeditions. He was knighted by the Swedish king for distinguished service to his country.

Just previous to the time of Worthen's demise the materials of the museum had been moved and were badly disarranged. Lindahl's first work upon assuming the curatorship was to put the collections in order. He also edited the final reports of Worthen, and supervised the geological exhibits of the State at the World's Columbian Exposition. After leaving Springfield Dr. Lindahl was director of the Cincinnati Society of Natural History until a short time before his death in Chicago in 1912.



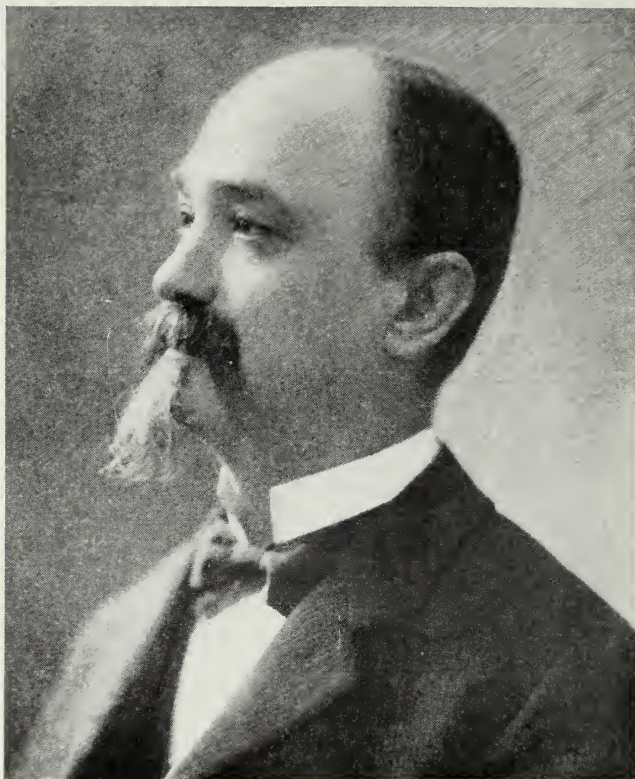
WM. F. E. GURLEY
Curator, 1893-1897

Mr. Gurley, like his predecessors, was a geologist. He was born in Oswego, New York, in 1854, coming to Illinois in his early childhood.

Of his work, Gurley has written: "From the moment I first became interested in the subject of geology, I set to work accumulating a paleontological collection and library, and it was my ambition to place myself in a position financially where I could 'settle down' and devote myself entirely to this subject. When a child of six years, I was rendered totally blind through sickness, and after a period of several months partly recovered my sight. I never fully recovered, and during my entire life have been subjected to much inconvenience from this source."

Numerous Bulletins were published during his incumbency, but during the last year he was Curator his eyes failed so badly that he found it necessary to relinquish all scientific work.

Mr. Gurley now holds an honorary position as Curator of Paleontology at the University of Chicago. He is a member and fellow of many scientific societies at home and abroad.

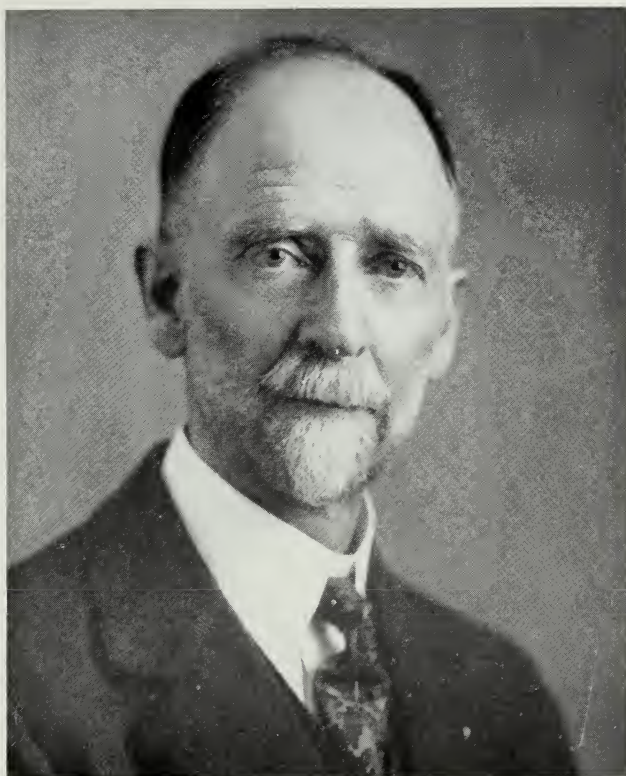


C. H. CRANTZ
Curator 1897-1906

Mr. Crantz was the successor of Gurley and like Lindahl, was a native of Sweden. At the time he was appointed Curator he was engaged in business in Chicago. During the time of his service the museum was moved from the State Capitol Building to the second floor of the newly completed Arsenal, where the museum remained housed until it was moved to its present home in the Centennial Building.

As little money was appropriated for the advancement of the Museum, Mr. Crantz was principally concerned with the caring for the material already on hand. This material was more permanently preserved through the installation of glass cases in the new quarters. Numerous mammals, birds, bird's nests and eggs, minerals, and ethnological specimens were received as gifts from private individuals. Friendly relations promoted by Mr. Crantz played an important part in the acquirement of these valuable donations.

In 1903 Mr. Crantz issued a "Report on the Condition of The Illinois State Museum of Natural History."



A. R. CROOK
Curator and later Chief, 1906-1930

Like Professor Worthen, Dr. A. R. Crook devoted the greater part of his professional career to the State Museum, and like Worthen, his services were fundamental to the existence of the institution.

Through his scientific contributions, his cordial relations with eminent scientists, legislators and numerous interested individuals Dr. Crook secured a remarkable increase in funds, prestige and recognition for the State Museum, and under him the collections were greatly expanded.

Dr. Crook was born in Circleville, Ohio in 1864, was graduated from Ohio Wesleyan University and received a Doctor of Philosophy degree from the University of Munich in 1892. For a year he served as Professor of Natural History at Wheaton College, Wheaton, Illinois and for thirteen years as Professor of Geology at Northwestern University. Dr. Crook was a leader in the founding of the Illinois State Academy of Science and was the author of many articles and publications. His "Guide to the Mineral Collections" is still a standard book on mineralogy. Dr. Crook died in 1930.



A. S. COGGESHALL
Chief, 1931-1937

Mr. Arthur Sterry Coggeshall, until recently Chief of the State Museum, had for thirty years been Chief Preparator in Vertebrate Paleontology and Curator of Public Education at the Carnegie Museum in Pittsburgh. Previous to that time he was employed in the American Museum in New York and the Yale Museum at New Haven, Connecticut. His early training was under the direction of some of the foremost museum men of America and when he went to Pittsburgh to take charge of the laboratories he was one of the youngest qualified museologists in the country.

With unlimited resources of practical museum experience, Mr. Coggeshall reorganized the State Museum and the exhibits in a way that has made the institution exceedingly attractive to the public. New types of display were adopted which provide a more pleasing approach to both art and the natural sciences. In addition a program of closer cooperation with the schools of the State and City was inaugurated and, many specimens were added to the collections.

Born in New Haven in 1873, Mr. Coggeshall is now Director of the Santa Barbara Museum.

AFFILIATED ORGANIZATIONS

THE ILLINOIS STATE ACADEMY OF SCIENCE

The Illinois State Academy of Science has at all times maintained a close connection with the State Museum. A. R. Crook, Curator of the Museum, called the organization meeting to order in the Senate Chamber, Springfield, on December 7, 1907, and was chosen the first secretary of the new organization. Somewhat later the Museum became the depository of the Academy and its Curator is ex-officio Librarian of the Academy and a member of its executive Council.

The first regular meeting of the Academy was held at Decatur on February 22, 1908, under the presidency of the late Professor T. C. Chamberlain, with a membership of 114. This membership reached a maximum of 1100 in 1925 and now exceeds 900. Due to increase in membership and specialization of interests, in addition to one general session, ten sectional meetings are now held simultaneously and the entire attendance at these meetings has been in excess of 500, while as many as 150 papers have been presented at the annual meeting.

In order that the influence of the Academy may be state-wide the annual meetings are carefully distributed throughout the principal towns and cities.

In 1928, under the direction of Miss Aleta McEvoy and Mr. Louis A. Astell a branch, known as the Junior Academy, was organized. Its membership consists of high school science clubs which undertake project studies in science under the direction of science instructors. It has a membership of more than 50 clubs involving over 3000 students. It meets at the same time and place as the Senior Academy and representatives of the different clubs have the opportunity of hearing addresses of interest and of competing for state awards for exhibits of project work and posters.

The objects of the Academy are threefold: (1) the promotion of scientific research; (2) the diffusion of scientific knowledge; and (3) the unification of the scientific interests of the State. Its Transactions appear in quarterly numbers and have contained the substance of more than 1500 papers presented at the annual meetings. An annual grant for printing is made by the State Legislature, through the Museum.

Beginning in 1930 the Transactions have been issued in quarterly numbers in an effort to maintain a more continuous contact between the Executive Council and the members.

The annual dues are \$1.00 and membership is open to all who are interested in any branch of science.

The business of the Academy is managed by an Executive Council meeting quarterly and consisting of a President, two Vice-Presidents, Secretary, Treasurer, Librarian and two immediate Past Presidents.

Various organizations within the State have become affiliated with the Academy. The Academy itself became affiliated with the American Association for the Advancement of Science in 1919, and receives from it an annual grant which is used to promote original research.

Geo. D. Fuller.

AFFILIATED ORGANIZATIONS THE SPRINGFIELD NATURE LEAGUE

The Springfield Nature League was organized in Springfield, Illinois, in 1932 as a Member Club of the Mid-West Conference of the American Institute of Field Naturalists, for the purpose of developing people's interest in the beauty of the out-of-doors.

During the five years since its inception, the League has grown considerably under the wise leadership of officers of civic breadth and with direction from the writer of this account.

It has become affiliated with the Illinois State Museum ;and associated with the work of and endorsed by the Superintendent of Public Instruction, Mr. John A. Wieland of the State of Illinois; and by the State Department of Conservation.

The League also has acquired certain rights over a large tract of marginal land on Lake Springfield. This was made possible through the interest of the city of Springfield in wild life conservation. The sanctuary has been laid out by the United States Department of the Interior National Park Service with the cooperation of the State of Illinois and the city of Springfield, Mr. Willis J. Spaulding, Commissioner of Public Property, in charge.

By means of leisurely hikes, lectures, degree classes and educational tours the League definitely keeps alive the old interest in nature lore. It provides that necessary practice in observation that is required of all of us to keep senses alert and mind abreast to what is going on outdoors. In addition, more permanent work is offered through check-lists, keys, requirement sheets, etc. These serve the purpose of continuing on individual efforts after group meetings are over.

In this connection, the Illinois State Library has been of special service in providing a well-rounded program of reading for members, and the League in turn has printed a pamphlet listing all recommended Field Books of Nature Study in each of fourteen fields.

One other great advance contemplated in the organization is that of specialization, with Departments devoted to one particular subject. Already in existence is as Astronomy group, one for Geology, one for Botany and one for Birds.

The affiliation with the Illinois State Museum has proved of great mutual benefit. The League has been permitted many opportunities to display its collection. Regular classes take place in a meeting hall provided for that purpose. Most important of all the Museum offers three honorary certificates and a bronze medal, in recognition of the various stages of advancement of members in their nature education. A booklet has been drawn up suggesting such requirements as need to be fulfilled in order to obtain the coveted diplomas. These same degree requirements, leading respectively to the Amateur Naturalist Award, Ranger Naturalist, and finally, the Nature Guide, have aroused considerable interest and may pave the way to the establishment of a Nature Guide School, and consolidation of nature study clubs throughout the state.

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